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Atlas: Coal-mine Workings of the Edmonton Area

by

Richard Spence Taylor
Consulting Geologist

Spence Taylor and Associates Limited
Edmonton, Alberta

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Atlas: Coal-mine Workings of the Edmonton Area

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INTRODUCTION

Origin, scope, and purpose of study.

In the last half-dozen years I've had occasion to work in a small way on several engineering projects in the central part of the City. In each case but one it became apparent during the course of the work that old coal-mine workings were a factor to be considered. In the exception to the foregoing, I found during the course of this study that old mine workings were involved there, as well.

It has become increasingly apparent in recent years that the readily available records on our old mines are inadequate for a city putting up 40-storey buildings. Part of this is caused by the fact that government record-keeping on the coal mines of the Northwest Territories didn't actively start until 1897. By that time there were already many abandoned workings above the river, that reached back from both banks of the river up to 800' or more. Some of these workings underlie portions of what is now the central part of the City.

Part of the cause lies in the incompleteness of the early government records. The single Inspector of Coal Mines had to cover all the coal mines of the Territories in the early years - an impossible task to complete in detail. Another cause lay in the lack of teeth in the early coal-mining regulations. Although mine plans were required, many operators opened mines, worked them a few years and then abandoned them, all without a single survey, and there wasn't a thing the inspector could do about it.

It is also evident that as time passes less and less information is available on the old workings, for there are fewer old-timers left to fill in gaps in our recorded knowledge. For these reasons, and because of an intense personal interest in the subject, I decided to compile a set of maps of the mine workings under and immediately about the City - an area of about 225 square miles. The project was intended to occupy three or four months of slack wintertime. It got a bit out-of-hand, however, for it has taken the equivalent of 11 full-time months to complete.

As finished, it is a compilation of geotechnical data relating to disturbed zones within the rocks underlying the study area. The most wide-spread disturbed zones are nearly horizontal - the mine workings. Some disturbed zones are vertical (shafts). In many instances these subsurface disturbed zones have affected surface topography and in some instances the buildings sited thereon. In some districts within the study area the surface is still being affected.

Strip mines are also mapped, but these surficial disturbed areas are not regarded as critical to this study.

Of necessity, this is also a history of coal mining within the area. However, it is an incomplete history in that it's concerned only with those aspects of the study that contributed to my fundamental objective. This, the purpose of the study, was to provide a basic reference work on some geotechnical factors of importance to foundation and heavy structure engineers working in the Edmonton Area.

Brief history of coal mining in area.

Coal was probably being used by the Fort's blacksmith 150 years ago; certainly it was being so used in 1841. In the early 1870's many settlers were gopher-holing in the river banks for coal for their own use. In 1874 the first stove designed for coal-burning was brought to Edmonton by John Walter.

Commercial coal mining was reported in the first issue of the Bulletin (later, the Edmonton Bulletin) on 6-xii-80: the letting of a contract for 300 tons by the H.B.C. to Alex. Robinson. Several other small mines opened that winter season of 1880-1881. In 1882 coal was exported downriver by barge to Saskatchewan. In 1892 the new railroad made Calgary a market, and coal was shipped there and to other points along the railroad.

Between 1880 and Mar. 1970, when the last mine within the City and Area closed, the total of mines and prospects within the Edmonton Area rose to 153. The produced tonnage of record is 15,180,929, while the known area of coal-mine workings aggregates 3260a. In some few places, two levels of workings exist, one above the other.

Mining was concentrated in three districts: Big Island, Rabbit Hill, and the City. Within the City District, workings extend discontinuously from the apex of a narrow triangle near Groat Bridge to the base of the triangle in the Clover Bar area. Mines ranged in size from those that produced nothing (prospects) to the Black Diamond Mine that produced 3,125,985 tons.
Refs.: 1; 2; 9; Cashman, 1964; Simpson, 1847.

Data presentation.

Base map and mine maps: The base map used, with permission, for Plates 2-13 inclusive and three of the insets on Plate 14 is a copyright map of the Edmonton Police Department. This map has a nominal scale of 1" = 500' and is the most accurate map at this scale available. There are scale variations within parts of the base map, however. The actual scales found during the course of this study, determined by comparison with mine and Township Survey plans, range from 1" = 500' to about 1" = 540'. The highest value (1" = 540') was found in a single area. Most commonly, the scale of the base map appears to be in the range of 1" = 515' to 1" = 520'.

Mine maps for many years have been required by government regulations to be at a scale of 1" = 100'. In the records, however, maps were found at a variety of scales from 1" = 25' to 1" = 200'. All of these scales but one could be handled by the mechanical equipment used to reduce the mine plans to 1" = 500'. The exception was the final plan of our largest mine (No. 99) which is at a scale of 1" = 2 chains (132'). The reduction of this plan required special treatment which is discussed fully in the text with Plate 10.

A Marabu 90-cm pantograph was used to mechanically reduce the mine plans and to plot them on the base map. Plotting was done from some point common to both maps; these individual 'plot points' are identified in the text. All reduced mine-plans are at 1" = 500' on the plates. The scale variations of the base map cause discrepancies to occur between base map and reduced mine-plan. Because the scale of the base map always varies on one side of 1" = 500', the area of the reduced mine-plan is represented on the base map by an area of equal size (where base-map scale is 1" = 500') or, most commonly, by an area of smaller size where the base-map scale is 1" = 500+'. Thus, in many cases, the reduced mine-plans reach farther away from the plot points on the base map than they do in actuality. A method of handling such discrepancies is discussed fully in the text with Plate 3 (Mine No. 1727), where base-map scale is about 1" = 540'.

Where such discrepancies occur in connection with the individual reduced mine-plan, they are discussed in the Remarks section of that mine when their magnitude equals or exceeds a selected 'level of significance'. This level was set at 40', for two reasons. Mechanical hysteresis in the pantograph caused errors of up to a detected 20' in the reduced mine-plans. Second, my drafting technique caused errors of similar magnitude. Thus, the reduced mine-plans, with respect to the position of any boundary point, are subject to a cumulative error of ±40'.

Mine numbers: Two different numbering systems are used. The government started numbering the existing mines in 1901 with a simple digit system. In the first application of the system to the area, no note was taken of the relative ages of the mines. Thus, Mine No. 8 is younger (opened later) than Mine No. 33; a not uncommon occurrence. In later years, the digit system represents a chronological sequence of mine openings.

For those mines that opened before government records started I used the letter "X" followed by digits. The majority of numbers in this system (X1 through X49) present a chronological sequence. They are mines initially identified from reports in the Edmonton Bulletin. The balance of the X-numbers, however, are not in chronological sequence; they represent bits and pieces picked up from other sources.

Compound mine numbers are common in this study. In some instances a mine originally identified in the Edmonton Bulletin was traced into a numbered mine in the government records, e.g. X45/12. Sometimes a mine identified in the Bulletin was eventually linked to one reported in the same source, but with a different operator, e.g. X33/X43/X49. In this latter case, all numbers but the first have been dropped, so that there are missing numbers in the X-series.

In the early years of government records many small individually-numbered mines were combined by operators into single large operations with numbers like 9/14/79. In all such cases of compound numbers, the number with which the workings are labelled on the plates is specified.

Following the mine number, the abbreviations 'u/g' or 'strip', or both, are given to indicate the type of mining carried on.

Mine names: The mine names given are those found in the source materials. Sometimes, under different operators, different names were used for the same mine. In these cases I selected what appeared to be the most popular name. Several mines were commonly known by two names: these are both given, with one in parentheses. In two instances, the two mines of the H.B.C., I assigned names because I thought it fitting.

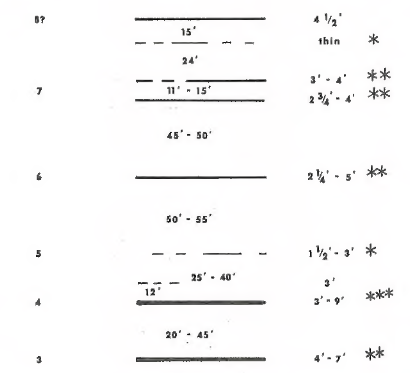
Locations: Within the Edmonton Settlement of 1882 (Deane's map) locations are given by river lots. River-lot boundaries are shown approximately by ticks on the plates, where they contact the river. Outside the 1882 settlement locations are given in terms of legal subdivisions of section-township-range.

Four categories of location are used: unknown, uncertain, approximate, and location /known/. Mines and prospects with locations of the first category are tabulated separately on whichever plate they are believed to occur. The second category indicates that the general location is known: within a particular river lot or legal subdivision, or perhaps two lsd's. The third category, approximate, means that there is information that permits placing a mine within some particular part of one of the foregoing land divisions. I usually think of these as being located within ±100' - ±200' along the seam. In the fourth category (known) locations are derived from mapped information in the records or on mine plans.

Periods of operation: The periods of operation of many of the old mines are indeterminant. Frequently, the first mention in the source materials is of an operating mine with no indication as to how long the mine has been operating. Not uncommonly, in a given year a mine was producing well, employing several men, and apparently had years of fruitful operation ahead of it. The next mention of it - one, two, or several years later - the operator has disappeared and someone reports on 'the old abandoned mine'. Such indeterminancies are indicated by question marks.

Coal seams: Most mines in the area operated in one seam. A few mined simultaeously in two seams, but in these mines one seam was generally far more important than the other. Only one small mine (X7/6, Plate 6) is known to have operated in three seams. Here, workings were probably about equally extensive in the upper two seams. The third and lowest seam was prospected after the closure of the upper pair of workings. A very small tonnage was produced from the prospect.

The local stratigraphy - the sequence of coal seams within the Edmonton formation - is of interest to this study only as it can yield information useful to engineering purposes. In this sense, the sequence of seams can be useful as an aid to the interpretation of test-hole data. For this reason I include the following stratigraphic section.



The Clover Bar seam (***), about 50' below river level in the centre of the City, is the seam from which the most coal has been mined. Lesser but significant amounts have been taken out of four other seams (**). From two more seams (*) very small tonnages were mined. This column differs slightly from those of Beach and Allan. Beach's seam numbers are included up the left side, the major difference being that his seam no. 7 is actually two seams or he was unaware of the existence of the second nearby seam. I do not know the relationship of the Big Island and/or Rabbit Hill seam(s) to the top of my column.

The host rocks for the seams are the incompetent sandstones and shales of the Edmonton formation. These rocks are frequently bentonitic, and bentonite stringers within the formation are not uncommon. The clay shales making the roofs and/or floors of some mines were troublesome when wet. They always deformed under load and required frequent brushing (trimming) to keep entries open to the same clear heighth.

The regional dip of the Edmonton formation is gentle (20'-30'/mile) to the S.W. through the Area. Locally, however, within the Area the dip may be gentle in any direction, or the beds may be horizontal.
Refs.: 9; Allan, 1943.

Cover: This value gives the thickness of soil and rock over the mine workings. No distinction is made, in this entry, between these materials. In some mines, the workings literally ran out of the rock and found themselves mining a seam with a gravel or sand roof. If the miners were fortunate, these materials were dry. On occasion, saturated materials flowed into the workings.

Values for cover are given on many of the mine maps, but frequently these are point values and do not indicate the range of cover thicknesses. In most cases, I determined cover values from the National Topographic 1:25,000 series maps of the area. These values are believed to be generally correct to within ±10'. In some few cases, where it was not possible to locate a mine, I used whatever source material was available with information on this factor.

Areas of workings: Reduced mine-plan areas were determined by replicate runs with a Coradi planimeter. The most of these areal determinations are correct to within ±1/4a. In some few cases the error may reach ±1/2a in the larger mines.

Estimated areas were determined by single or double runs with the planimeter and rounded off to the half-acre, except for a few small mines. With these latter, available information permitted a closer estimation of their size.

The point to bear in mind here is that the boundaries of these mine workings are not totally definitive - a frequent misconception conveyed by a line on a map. In nearly every instance in this study where younger workings have approached older, the records indicate that discrepancies have been found between the map of the older workings and the location (extent) of the actual workings themselves. In all cases noted but one, the older workings were more extensive than was indicated on their maps. Discrepancies of this nature between workings and the maps of these workings have recorded magnitudes of up to an extreme of 175'-200'. More common are 50'-100' discrepancies of this type. Where the data available made it possible to do so, the extent of mapped workings on my plates has been corrected for these discrepancies.

The above makes apparent one important point. If the determination of the nature and extent of underlying mine workings is critical to any engineering project, test drilling must be carried out to no less than 100' from the mapped boundary of the workings.

Production records: These values come from three sources. A very few values come from reports in the Edmonton Bulletin in the period 1880-1900. The older government figures, starting in 1898, are on the Annual Returns (later, Quarterly Returns) sent in by the operators. These are found in the files of the individual mines for the period 1898-1917. There is no doubt but that many of these older values in the government records are grossly inaccurate. Some operators of small mines habitually rounded their reported tonnages off to the nearest 500 or 1,000 tons.

In 1917 the Mines Division commenced keeping production record books, and this practice continues. For many years production figures have been submitted by each mine operator at monthly intervals.

In the text following this, descriptive terms indicative of the total production of a mine have been used as a matter of convenience. These terms are defined as follows:

		Total production
Very small mine		up to 1,000 tons;
Small mine	1,000,	up to 10,000 tons;
Medium mine	10,000,	up to 100,000 tons;
Large mine	100,000,	up to 1,000,000 tons;
Very large mine		1,000,000 tons or more.

Recovery: This value is an important one. It tells more of the ultimate amount and nature of subsidence to be expected above mine workings than any other factor involved in this study but one. The single exception is the system of mining used. The full discussion of subsidence is under the following Remarks section of this Introduction.

The recovery value is determined as follows:

$$\frac{\text{Total production (tons)} \div 1800 \text{ (tons/a.ft.)}}{\text{Area of workings (acres)} \times \text{Thickness of coal mined (ft.)}} \; 100 = \%.$$

The value of 1800 tons/acre-foot is arrived at from data supplied by Stansfield and Lang, and from Beach. It is predicated on an average ash content of 7 1/2%.

Of the remaining three values used in the equation, only one is a product of subjective judgement. This is the value used for mined thickness of coal. In those few mines where a single seam thickness is given, there is no problem. In all the other mines the value is no more than a reasoned estimate based on such data as are available in the records.

In a case such as that of the No. 2 workings of Mine No. 46 (Plate 9), where the seam varied from 3' to 7' 6", my estimate is subject to error. Each quarter-foot of error in this estimate amounts to about 2 1/2% of recovery. Some of my estimates may be a half-foot or more in error. Thus, I regard my recovery values at best as ±5% in the majority of instances.

This is especially true of the mines in the Clover Bar and Beverly area. The mined Clover Bar seam thickness throughout this area ranged from less than 3' to as high as 9'. Most commonly, there is a 6"-18" parting, 6"-30" below the top of the seam. When the parting was thin the whole seam was taken out in some cases. In other instances, the parting would be broken out to waste and the top coal left for the roof. The reports usually did not specify what particular practice was being followed at the individual mine. When seam thicknesses were reported, it generally is not possible to determine whether total thickness or mined thickness was meant.
Refs.: 9; Stansfield and Lang, 1944.

Remarks section.

Mine entries: These are relatively straight-forward data, and we usually either have them or they are just not available. The information we have upon the manner in which these openings were treated upon mine closure is something else again.

The operators of many of the older mines just walked away from them, and shafts, slopes, and drifts were left to fill as nature saw fit. When the government passed regulations requiring the filling of shafts and the acceptable closure (usually by entrance-caving) of slopes and drifts, some sneaky practices appeared. Most of these concerned the shafts of some of the smaller mines; it is relatively easy to cave the outer few feet of a slope or drift and let time take care of the rest.

Some shafts have been bottom-filled with old mine cars and timbers, scrap and anything else that was of little value and available nearby. On top of this would be placed sand or gravel or any other fill acceptable to the government. In several instances, operators have built stout platforms across the shafts 6'-12' below the surface, and then piled a suitable fill on top this. Few such occurrences appear in the official records. I learned of most of them by word-of-mouth from old timers of the mining business. I don't mean to imply that these were common or general practices. They were a practice of that percentage of sharp operators that is always with us.

Sometimes an anomaly appears in the abandonment report of what was a large and well-run mine. For example, the Black Diamond Mine (No. 99, Plate 10) carefully reported the filling and/or closure of five shafts and slopes. However, a composite map of this mine's workings during the last few years of operation shows six openings to the workings. There is no record of the closure of the northern (river) slope. Most probably, this slope was either artificially or naturally caved shut before mine closure, but I found nothing to indicate this in the records of this mine.

All of the foregoing is to point up strongly one fact. Any mapped opening to old workings should be treated with caution until the actual nature of its (filled?) condition is determined. Considering the size of some of the shafts - two and three compartments with widths of up to 27' and depths of up to 322' - the degree of disturbance to the enclosing rocks can be considerable.

Maps available: In part, this is a listing of the maps available at the present time. It is obvious from the filed records that many mine plans once in Mines Division archives have disappeared. In part, this is a listing of plans that give information not shown on the final plan or on whatever plan bears the latest date on a given mine's map-roll. Finally, mine maps are listed here that give information on a different mine that does not show up on the plans of that particular (different) mine.

Respecting the first of the paragraph above, it is apparent that sometime after 1914-1916 many of the pre-1917 mine plans were disposed of. This is unfortunate because much information on the extent and location of earlier workings, and the openings to them, was lost. It is to be hoped that nothing similar will occur in the future.

Subsidence and cave-ins; systems of mining: Surface subsidence over mine workings and its concomitant damage to buildings has been a matter of concern to Town and City authorities since before Sept. 1898. On the 27th of that month a special Town Council meeting was held to consider a realtor's offer of certain properties, including the discontinuance of coal mining under River Lot 8.

In Sept. 1899 the Edmonton Bulletin reported that "The Town authorities have purchased the coal rights for a considerable distance along the front of the town with a view of preventing further undermining as far as possible." Those Town councilors did a good job for which we can be thankful today. The last mine within the oldest Town limits (RL's 4 - 14 incl. and part of Fraser Flat) closed in 1901 although there was still much accessible coal under this area.

In 1929 the City sent a delegation to Ottawa to press for the cessation of coal mining under RL 20, which was still federal government property. The government acceded to this request and in 1930 mining operations in RL 20 were stopped, and this stopped the mining under RL's 16 and 18 as well.

With the single exception of the College Avenue School (discussed under Remarks, Mine X16, Plate 6) I have been unable to learn of any specific occurrences of subsidence damage to buildings in the central part of the City. All materials found bearing on this subject are of a general nature, such as the foregoing Town Council activities and the Deputy Commissioner of Public Works letter discussed under Remarks, Mine No. 50, Plate 6. However, in the Highlands, Beverly, and Clover Bar areas reports of specific occurrences of subsidence and related surface damage, and of cave-ins, are not uncommon in the records. These incidents are discussed under the particular mines to which they are related.

A few months ago I was asked if this study would permit the prediction of subsidence, past or still to occur, over existing mine workings. My answer was a flat 'no'. I would like to qualify that now, for I've learned a bit more about subsidence in the interim, but my knowledge of the subject is still slight.

Two systems of mining were practiced in the Edmonton Area: the longwall system and the room-and-pillar system. In the longwall system, as practiced here, a long face was continuously mined and advanced by machinery while the roof was held up close back of the face by props. Back of the props the roof was permitted to cave. Working openings - travel way; conveyor way - were kept open at each side of the face, parallel to the panel. Panel size varied at different mines, with mine plans showing panel sizes of from 150' X 250' to 400' X 2000+'. Inspectors' reports indicate panel widths of as little as 100' and as great as 500', with lengths unspecified.

The longwall system was used extensively at only one mine in the area, No. 1427 (Plate 13), and this usage is shown by the mine's boundary. Several other mines used the longwall system for greater or lesser periods of time but never so much as to produce a major part of their coal by this system. Where a mine is reported to have used the longwall system, this is mentioned in the Remarks section of the specific mine. It is to be doubted that more than six or perhaps seven percent of the coal mined in the Edmonton district was produced by this system.

This is unfortunate in one sense, for techniques have been developed in England and Europe for the prediction of subsidence over longwall panels (that fulfilled certain conditions) with an accuracy of ±10% in the great majority of cases. The same techniques enable me to say that 97+% of whatever subsidence is to occur over the mined longwall panels of the Edmonton district, has already taken place. Whether there is, in fact, any residual subsidence to occur over these panels is a matter for further research on the part of subsidence engineers.

Again, and most unfortunately, the prediction techniques that apply to the longwall system of mining do not apply to the room-and-pillar system. "Here it is not possible to predict the development of subsidence since there are such a great variety of pillar sizes and depths. Pillars may fail after years have elapsed, the amount of movement depending on the heading space available into which they can crush. Or they might be forced through a soft floor such as fireclay, especially if this should become wet, the result being to lower the surface just as effectively as though the pillars had crushed and spread. Where the floor is soft the limiting factors are the thickness of the soft floor stratum and the space available in the headings into which the pillars can be forced." The authority for this and the next preceding paragraph is the 'Subsidence Engineers' Handbook' of England's National Coal Board, for a copy of which I'm deeply grateful to R. J. Orchard, Chief Surveyor of that organization.

Some general observations can be hazarded with respect to subsidence over Edmonton Area room-and-pillar workings. Where coal recovery was low (25%-30%) the eventual average lowering of the surface will be a small fraction of the mined seam thickness. The surface can be expected to develop a pock-marked appearance with closed depressions within a generally flat surface. Where recovery is high, eventual lowering of the surface will be a major fraction of the mined area thickness. Such subsidence can be expected to occur (to have occurred?) within the quarter-section mined by Fraser-MacKay (No. 90), where recovery was 75% and possibly more. The eventual surface here will be generally flat, with a scattering of low, perhaps linear rises, representing the remnants of pillars.

In the more common range of recoveries (45%-55%), I expect an undulating surface to develop eventually. This will be made up nearly equally of rises and swales with an amplitude of relief approaching three-quarters or more of the mined thickness of the seam. This discussion presupposes a level or flat surface. Elsewhere, these topographies I envision as developing by subsidence over room-and-pillar workings will be superposed on the pre-existing topography.

A tentative generalization can be advanced with respect to time variations associated with the subsidence discussed in the foregoing general observations. Where recovery is high, subsidence will take place more rapidly, and be completed more quickly, than where recovery is low. This seems obvious to me, because of the large difference in the amount of roof support left in the workings in these cases. Please note that I regard the remarks of this and the two preceding paragraphs as applying only to those workings in the incompetent rocks of the Edmonton formation, in the Edmonton Area.

There is no doubt but that there is a large body of existing data relating to subsidence that has already occurred over mine workings in the Edmonton Area. Unfortunately, these data are not readily available. They are to be found, I'm sure, in the engineering records of level traverses run throughout this area, by railroads and City, Provincial, and Federal departments. A study of these data would yield valuable information on subsidence that has occurred, and this information would permit an evaluation of subsidence still to occur.

Both subsidence and cave-ins are known to be occurring at present on two of the river terraces within the City. With such occurrences at these locations, I can find no logical reason to say that subsidence is not occurring on the nearby, higher surfaces over the same workings. Both the rate and magnitude of subsidence within a given period are probably smaller on these higher surfaces, because of the greater thickness of cover over the workings.

The only distinction conveyed by the term 'cave-in', is that it is subsidence at a point. The more general term, subsidence, is held to characterize areas. Cave-ins related to our mine workings are known to have broken the surface through as much as 140' of cover. This chimney-like effect can only occur through such thicknesses of cover where a large volume of roof rock has come down during mining operations and has been loaded out as waste. This has left a large void into which the later caved rock can spread. Smaller cave-ins, through thinner cover, have commonly been caused by the pulling of pillars in a mine.
Refs.: 2; Cashman, 1956; England, N.C.B., 1966.

General observations: This portion of the Remarks section contains notes of interest to the purpose of the study, derived most generally of mine inspectors' reports. Such things as variations in seam thickness; creeps or squeezes in the mine workings and their effects; inflows of water, sand, or other foreign material; flooding of a mine, with the causes; structural features such as faults; fires or gas (methane) in the seam; explosions in a mine; and similar informative items. It also contains mention of landslides that have affected some of the old river-bank workings.

Sources of information.

The main source of information for this study was the material, both current and archival, held by the Mines Division, Provincial Department of Mines and Minerals. At present, this material is in the sub-basement Records Room in the Dept. of Agriculture building at 97th Ave. and 107th St., Edmonton.

A second important source of information was the Edmonton Bulletin. This is available - except for a few missing issues - on micro-film in Cameron Library, University of Alberta, Edmonton. The South Edmonton News/Alberta Plaindealer is also to be found there on micro-film.

A half-dozen other sources were used sufficiently often to merit the assigning of general reference numbers to them. Thus, at the beginning of the References Cited, the nine general references will be found. Under each of these nine numbers, each reference from that source to any mine is listed in chronological sequence following that mine's number.

Other source materials are handled in the normal mode of citation, following the general references.

Undoubtedly, there is useful information in several sources that were not searched. One example of these would be the records of the Northwest Territories government that are still in the Legislative Library, Winnipeg, Manitoba. Another, the Federal Government's records of some now-nonexistent branches of the old Dept. of Public Works; those of the School and Mining Lands Branch, for example. A number of such possibilities exist. However, considerations of time and expense ruled out all sources not in Edmonton.

Acknowledgements.

Foremost among those to whom I'm indebted is Mr. Philip Melson, Director, Mines Division, Department of Mines and Minerals, who gave me access to all Division records pertinent to this study. The Division staff were uniformly helpful, but Mrs. Rasmussen deserves my especial thanks for unfailing good humour as well. To maintain a characteristic such as this in the face of some of my questions must have been very difficult.

Mr. E. D. Barnard, Supervisor of Records for the Department, has my thanks for permitting me to move my 8' X 4' drafting table into the middle of the crowded sub-basement Records Room for three months, for the map work.

Miss Salmond of Cameron Library's Micro-materials section; Mrs. Kreisl of Provincial Archives; and Mrs. LaRose of the City's Historical Exhibits Building - all were most helpful and have my warm gratitude.

Mr. Rudy Yacyshyn, Project Engineer, City Engineering Department, made available to me the Engineering Department's map collection dealing with mine workings within the City, and this was most helpful.

Last, and far from least, my warm thanks to Sgt. Sam Donaghey, head of the Map Section, City Police Department. Without his help, this study would have taken even longer to complete.

The help of several others is acknowledged within the text, or by citation in the references with the individual mine, and in References Cited.

Note of caution, and request.

It is not possible, at this late date, to compile a work such as this without error. I'm sure there are errors in this study; I hope that most of them are errors of omission, and not of commission. Undoubtedly there are very small mines, and perhaps several small mines, that have operated in the Area and of which I have found no record.

Quite probably some of the smaller mines for which there are no maps, are misplaced in their locations on my plates. If information on old mine workings is critical to some project in the vicinity of one of the workings located as 'uncertain' or 'approximate', then the foundation investigation must be conducted as though the site were known to be over old workings.

With respect to the mapped boundaries of 'known' workings - mapped mine boundaries are always suspect. In many instances, mine surveyors never learned of the full extent of mine workings. Except where mine workings are contiguous with those of an adjacent mine, I would regard the boundaries of all mine workings as having a 100'-wide 'suspect zone' about them.

In all cases where the data dealt with herein are regarded as of importance to a project, I strongly recommend that the user refer to the original maps and files in government records, if such exist.

With the passage of time, I expect the users of this study to become aware of a number of errors in it. I would deeply appreciate learning of these, that this work may be made more correct.

Richard Spence Taylor, Ph.D.
P.Geol. (Alta.)
P.Eng. (B. C.)

Edmonton, Alberta
June, 1971

Edm COAl_01

Edm 02

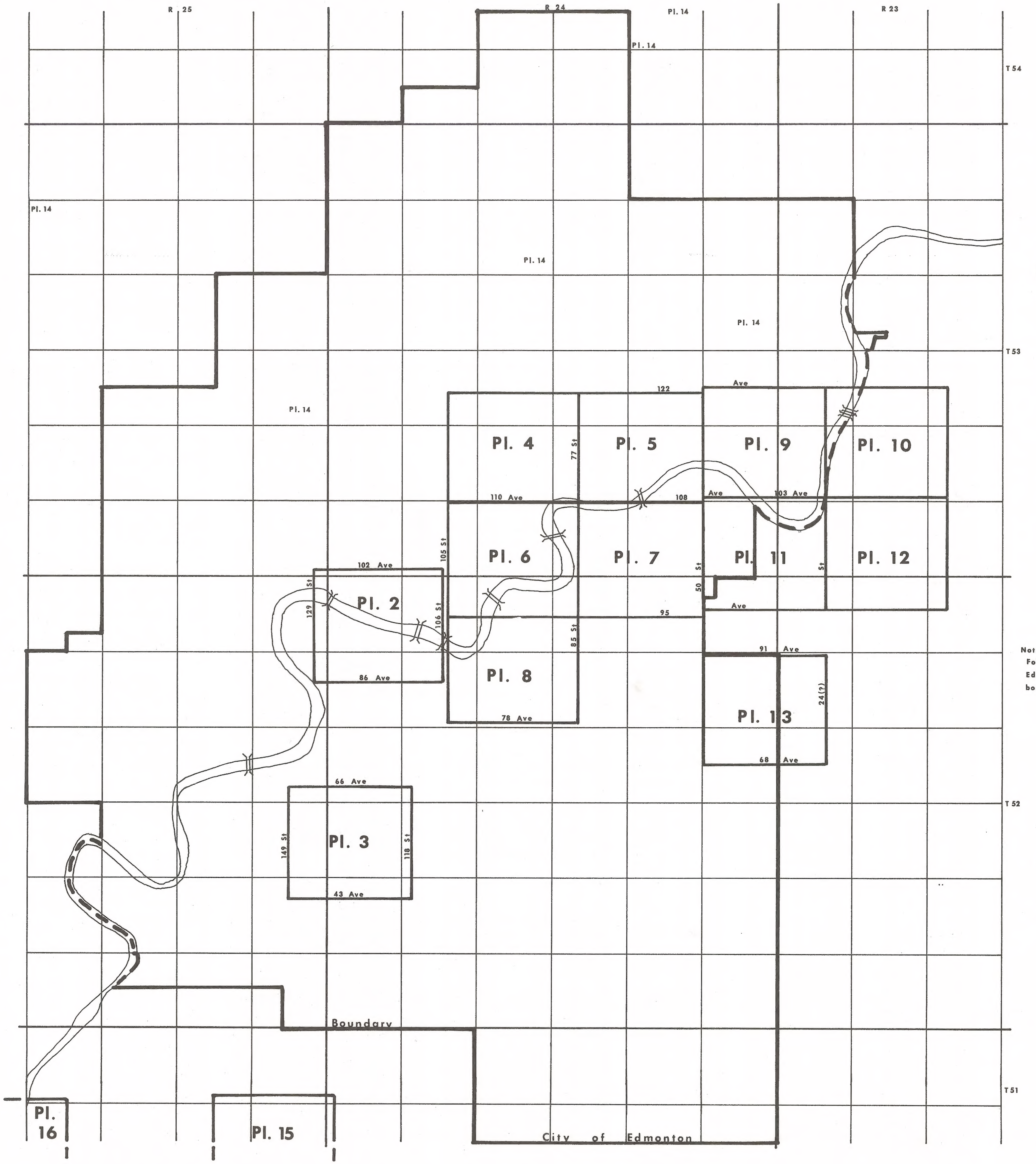


PLATE 1

Index Map

Scale
(approximate):
1 inch to 1 mile

Note:
For simplicity,
Edmonton Settlement
boundaries are ignored.

THE CITY DISTRICT

PLATES 2 - 14 INCLUSIVE

Mining in this district continued from 1880 or earlier, through Mar. 1970. There were 109 known prospects and mines within this district. Their total production of record exceeded 14 million tons. One mine (No. 99) produced nearly 22% of this total. Many prospects, very small mines, and some small mines had no recorded production.

Coal was taken from seven separate seams, through a vertical range of about 200' of rock. Mined seam thicknesses ranged from 18" to 9'.

Plate 14 shows six prospects and mines included in the above total of 109. Only one of these six lies within the main body of the district. The other five are scattered from the southern boundary of St. Albert, southeastward and eastward.

PLATE 2

Mine X1 (u/g). The Fort Mine. Location (uncertain): Hudson's Bay Co. Reserve. Operator: H.B.Co. Operated in and probably prior to 1841. Seams: 18" and ?. Cover: uncertain, from less than 80' to possibly 100' or more. Areal extent unknown; production unknown. No map.

Remarks: Simpson passed through the Fort in 1841 and commented that the coal was 'found to answer tolerably well for the blacksmith's forge'.

Hector stated in 1863 that the coal was used to the exclusion of all other fuel at the Fort. He described the two 18" seams below the Fort in such a fashion that it appears that they must lie below the river's floodwater levels. His description of the method used by the blacksmith to obtain coal makes it apparent that at that time nothing more than shallow gopher-holing was done. Hector stated specifically that 'there are no workings of any sort into the seams'; that is, no proper underground mine.

The Edmonton Bulletin commented on this mine in 1882, and again in 1884 when it reported that 'the H.B.C. are taking out coal from a seam almost directly below the Fort'. By 1884 much had been learned of the upper pair of mineable seams under Edmonton, and several mines were working in either or both of them. It is doubtful that the H.B.C. was working one of the lower 18" seams at this time. It is much more likely that the 1884 (and perhaps some earlier) work was in one of the upper pair of seams about 40' - 50' above low river levels. Such a mine would have had a cover of about 80' or less at the level of the Fort.

Nothing is known of this mine subsequent to 1884. Classed as a very small mine.
Refs.: 2; Simpson, 1847; Hector, 1863.

Mine X4 (u/g). Location (uncertain): River Lot 2. Operator: Alex Robinson. In Dec. 1880 the Bulletin reported that the 'H.B.C. has let contract for 300 tons of coal - - - it will be taken out of the bank on Mr. Groat's property'.

I assume that this contract was fulfilled. Most likely the mine was in the same seam as X51 across the river. Slightly updip and slightly higher on Groat's property, it could have been reached from the creek bottom, where the creek was undercutting the toe of the steep valley-wall to the west. Possibly, this mine was in one of the higher, upper pair of seams where X19 is plotted. It is known that X19 was on the west side of Groat's property; it is assumed that X4 was on the same side. The old timers usually looked for coal where coal had been found before, so X19 may have been very close to X4. Both of these mines may have been in or very near to either of the two positions plotted on my map. However, the position of X4 is regarded as the most likely position for both mines, because in 1934 Beach showed a commercial seam of coal outcropping in this general location. (See X60, also.)

Classed as a very small mine.
Refs.: 2; 9.

Mine X19 (u/g). Location (uncertain): River Lot 2. Operator: Malcolm Groat, who was also the owner of RL 2. In Jan. 1886 the Edmonton Bulletin stated that 'M. Groat mines the coal required for his own use on his own claim on the west side'. The seam Groat mined may have been at either of two levels, though most probably it was at the lower level. See remarks under X4, above. Nothing is known of the previous or subsequent history of this mine. (See X60, also.)

Classed as a very small mine.
Refs.: 2; 9.

Mine X51 (u/g). Location: River Lot 3. Operators: Allan Omand; Williams brothers. This mine was reported to be operated by Omand in a 3' seam in Nov. 1894. It is known to have been operated by the Williams brothers at a point in the period 1905-1907. The seam observed then was 5' thick with a 1' clay parting in the middle.

Three collapsed drifts into these old workings are crossed by the footpath between Emily Murphy and Kinsman parks, a short distance downstream of the former. The old drift entrances were below high floodwater levels.

The extent of the underground workings is unknown; there is no mine map. The drifts plotted are the actual ones at river-edge. The underground workings shown are a reasoned estimate. The single drift is plotted as breast workings - an old-time method of mining in the area. The pair of drifts, too close together to have been good individual breast workings, are regarded as main and counter drifts for ventilation to more extensive workings. The total area shown, 1 1/4a, with 50% recovery of an average thickness of 3 1/2' of coal would have yielded about 3900 tons. This is regarded as a reasonable value, even if production was somewhat intermittent in nature. The mine's operational history spans a minimum of 12 years, 1894 onwards, and may well have extended back into the Eighties.

The cover over the workings shown would be 10' - 70±'. The outline of the actual workings may, of course, differ from that I show. They might have been developed directly along the line of the pair of drifts under thicker cover, rather than laterally upstream to minimize roof pressures.
Refs.: 3; Omand, 1971.

Mine X54 (u/g). Location (approximate): River Lot 1. Operator: Joseph Hebert. The operator is reported to have sunk a shaft in 1882-1883 to a 'usable but not commercial seam' just north of the east-centre of RL 1, next to the RL 1/3 boundary, on the little 'hump' that projects westward from the foot of the valley-wall. Depth of shaft unknown; probably 45' or less. No further work known to have been done.

Classed as a prospect.
Ref.: Omand, 1971.

Mine X59 (u/g). Location: River Lot 5. Operator: unknown. Period of operation: unknown.

When I saw the remains of this old collapsed drift-entry in the late Fifties it consisted of a shallow cup-shaped depression in the slope some 80' - 100' below the top of the valley wall. Old squared timbers (6" X 6"; 8" X 8"?) stuck out of the soil at the back of the cup. Through the vegetation upslope a narrow swath could be seen within which the poplar were decidedly younger than those to either side. Even so, these 'younger' poplar appeared to be 20-30 or more years old. I took all this to indicate an old drift mine or prospect that had had a skipway cleared to the flat above.

In the mid-Sixties a narrow landslide took place here and obliterated this site. The landslide notched the top edge of the valley wall, and moved this edge back to within nine yards of Saskatchewan Drive. It is probable that a further (u/g) collapse of the old drift triggered this slide.

Classed as a prospect.

Mine X60 (u/g). Location (unknown): Probably in River Lot 2. Operators: Verey and McPherson. Period of operation: unknown, but believed to be earlier than 1890.

Beach reported that 'Dr. Verey and Ed. McPherson employed several miners working an upper seam, near where it dips into the river at Groat Ravine'. From Beach's map it would appear that these workings were upstream of Groat Ravine, but this is most uncertain. These workings may have been in the immediate vicinity of X4.

Classed as a very small mine.
Ref.: 9.

Mine No. 47 (u/g). Strathcona Mine. Location: River Lot 9. 1905-1911. Seam: 4'5" - 5'. Cover: 60' - 165±'. Known area: 20 3/4a. Recorded production (7 yrs of 7): 78,485 tons (43.60 a.ft.). Estimate average thickness of coal mined as 4 3/4'; this indicates about 45% recovery.

Remarks: Hoisting shaft 99' deep. Airshafts (three): no depths given. The northwestern airshaft was destroyed in a 1907 fire. The central airshaft is believed to have been the replacement intake airway. The southeastern airshaft is labelled 'manway' on the 1911 blueprint.

There is no abandonment plan in Mines Division archives. The only blueprint on the map-roll has a last date plotted against the u/g workings of 25-ii-11. This blueprint carries a note "Workings abandoned in April 1911". The amount the workings were extended in the two-month(?) interval between 25-ii-11 and abandonment is not known.

In the Mines Division files there is a second blueprint, undated and unsigned, with a last date of 19-viii-09 against the workings. This blueprint has on it dashed lines believed to indicate the approximate limits of unsurveyed extensions to the workings. The areas enclosed by these dashed lines I have included on my map.

No survey tie-point is given on either blueprint. I assumed that a point common to my map and both blueprints (and shown on all three) would be the point of intersection of the C.P. rail centreline with the east boundary of (the old) 109th Street. The workings are plotted with reference to this point. Mr. G. R. Younger, the C.P. Division Engineer, was good enough to tell me that while the rails might have shifted a few inches the line of the track is the same as that originally laid down.

The discrepancy between base map and reduced mine-plan is not significant in the north-south sense. It is significant in the east-west direction, as the workings reach 40' too far east, using the common street grid as control.

In Nov. 1908 the Mine Inspector stated that because of so much pillar-robbing a 'creep' was on the whole mine. In Mar. 1909 he stated that it was now 'impossible to get an accurate plan of their workings, because the inevitable has occurred and all the old workings have now caved in'. The dashed lines on the 1909 blueprint that I referred to earlier were probably an attempt to outline the unsurveyed workings that squeezed shut.

A different inspector in May 1909 reported that 'from all indications the old workings are closed down tight and I doubt if there is enough open space left to contain a dangerous body of water'. The old workings referred to lie, I believe, west, south, and south-southeast of the hoisting shaft and north of the railroad.

The Mine Inspector's report of 13-xi-09 stated that he had shut the mine down for operating in contravention of the Coal Mines Act. Specifically, that the travelway between intake shaft and outlet was caved tight; that is, there was only one usable outlet to the mine.

I should mention here that the hoisting shaft position as shown by Dowling in 1910 does not agree either in plan position or topographic site with that shown on the two blueprints. The position shown by the latter is that given on my plate.
Refs.: 1; 8.

Mine No. 127 (u/g). Location (uncertain): River Lot 7. Operator: Larry Garneau, Jr. The operator wrote in Mar. 1907 that he was 'developing a mine on River Lot 7'. This is all we know about it, except for Dowling's comment to the effect that the seam was a thin one. It was probably abandoned in 1907.

Classed as a prospect.
Refs.: 1; 8.

Mine No. 773 (u/g). McGuire Collieries. Location: River Lot 2. Two successive attempts were made, in 1918 and 1919, to sink a shaft to the Clover Bar seam at an estimated depth of 110'. Because of water troubles from the glacial and recent sediments the 11' X 5' shaft of 1918 got down only 48'. In 1919 an enlarged shaft (16'4" X 7'6") was down 38' in June. Operations were suspended in October; the total depth reached is not known. I doubt that solid coal was ever reached. No further work was done and notice of abandonment was given in 1920.

Classed as a prospect.
Refs.: 1; 4.

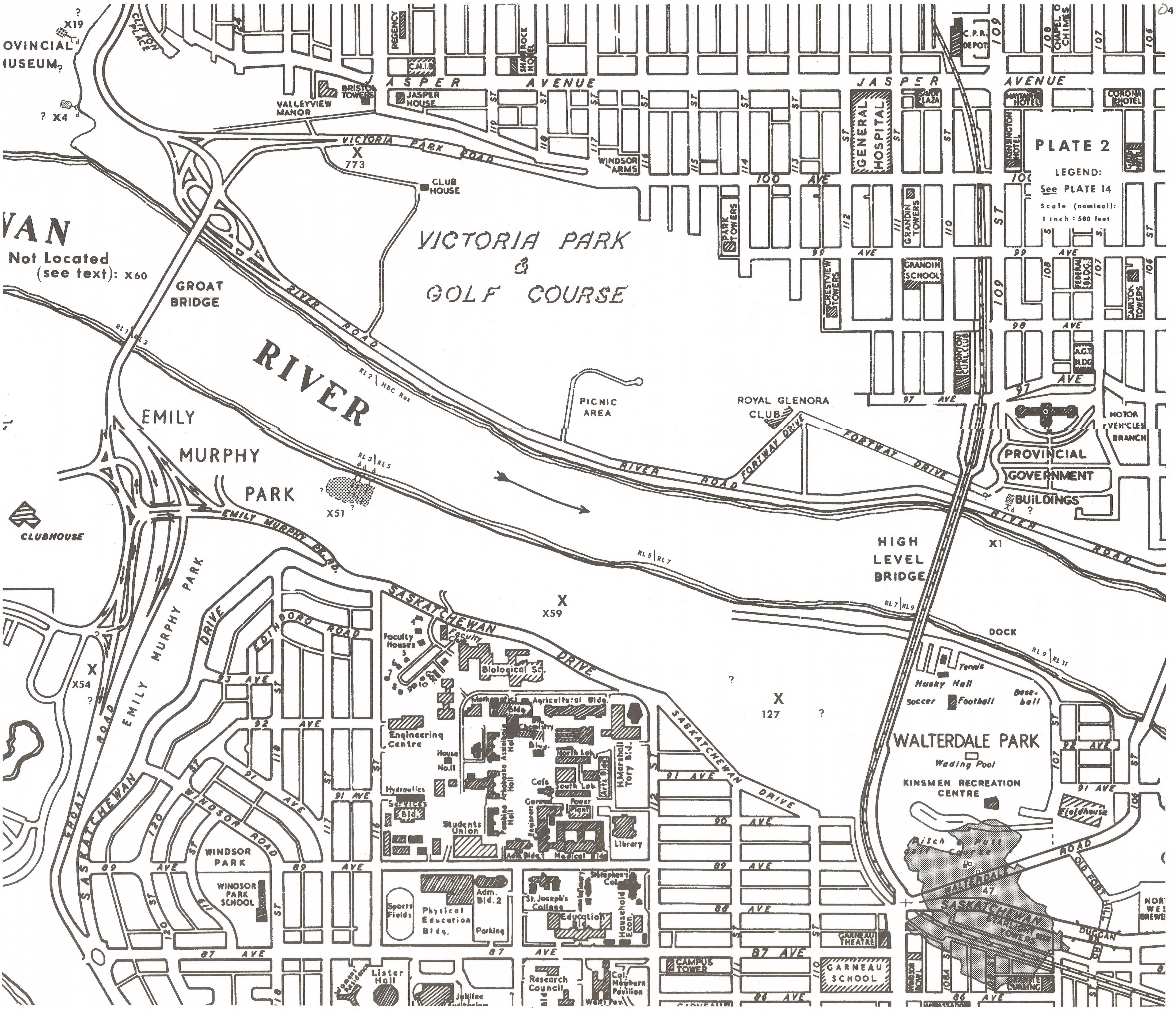


PLATE 2
LEGEND:
See PLATE 14
Scale (nominal):
1 inch = 500 feet
OVINCIAL MUSEUM
X19
X4
VALLEYVIEW MANOR
BRISTOL TOWERS
JASPER HOUSE
REGENCY
C.N.I.B.
SHAMROCK HOTEL
JASPER AVENUE
VICTORIA PARK ROAD
X 773
CLUB HOUSE
WINDSOR ARMS
GENERAL HOSPITAL
C.P.R. DEPOT
CHAPEL CHIMES
MAYFAIR HOTEL
CORONA HOTEL
KENSINGTON HOTEL
PARK TOWERS
GRANDIN TOWERS
GRANDIN SCHOOL
CRESTVIEW TOWERS
EDMONTON CURL. CLUB
FEDERAL BLDG.
CARLTON TOWERS
A.G.T. BLDG.
100 AVE
99 AVE
98 AVE
97 AVE
WAN
Not Located (see text): X60
GROAT BRIDGE
VICTORIA PARK & GOLF COURSE
RIVER ROAD
RIVER
RL 1 RL 3
RL 2 HBC Res
PICNIC AREA
ROYAL GLENORA CLUB
FORTWAY DRIVE
PROVINCIAL GOVERNMENT BUILDINGS
MOTOR VEHICLES BRANCH
EMILY MURPHY PARK
RL 3 RL 5
X51
CLUBHOUSE
EMILY MURPHY PK. RD.
HIGH LEVEL BRIDGE
X1
RL 5 RL 7
X X59
RL 7 RL 9
DOCK
RL 9 RL 11
SASKATCHEWAN DRIVE
EDINBORO ROAD
Faculty Houses
Faculty Club
Biological Sc.
X X54
EMILY MURPHY PARK
GROAT ROAD
X 127
Tennis
Husky Hall
Soccer
Football
Baseball
WALTERDALE PARK
Wading Pool
KINSMEN RECREATION CENTRE
Fieldhouse
Pitch & Putt Golf Course
Mathematics Bldg.
Agricultural Bldg.
Chemistry Bldg.
Engineering Centre
House No. 11
Assiniboia Hall
Athabasca Hall
North Lab.
South Lab.
Arts Bldg.
H. Marshall Tory Bld.
Cafe
Hydraulics
Services Bld.
Students Union
Pembina Hall
Engineers
General Power Plant
Library
Adm. Bldg. 1
Medical Bldg.
93 AVE
92 AVE
91 AVE
90 AVE
89 AVE
88 AVE
87 AVE
86 AVE
WINDSOR ROAD
WINDSOR PARK
WINDSOR PARK SCHOOL
SASKATCHEWAN DRIVE
Sports Fields
Physical Education Bldg.
Adm. Bld. 2
Parking
St. Stephen's College
St. Joseph's College
Education Bld.
Household Econ.
Garneau Theatre
Campus Tower
GARNEAU SCHOOL
WALTERDALE RD.
SASKATCHEWAN
STARLIGHT TOWERS
DUGGAN
OLD FORT HILL
NORTH WEST BREWERIES
GRANITE CURLING
Windsor Bowl
Women's Residence
Lister Hall
Jubilee Auditorium
Research Council
Col. Mewburn Pavilion
47

PLATE 3

Mine No. 1277. Location (uncertain): lsd 14, Sec 13-52-24-W4. Operator: Waclaw Fridel. In early May 1928 the operator obtained permission to prospect or drill. On 17-v-28 he notified the Mines Division that 'due to information received and verified by work and exposed 3'2" seam of coal' he was dropping the prospect as it was not commercial.

The nature of the work done is not known. Classed as a prospect.
Ref.: 1.

Mine No. 1727 (u/g). Whitemud Creek Mine. Location: lsd's 3 - 7, Sec 13-52-25-W4. 1952-1970. Seam: 6' - 8', level. Cover: 40'-190±'. Known area: 67 1/2a. Recorded production (19 yrs of 19): 273,796 tons (152.11 a.ft.). Estimate average thickness of coal mined as 6 1/4'; this indicates about 35% recovery.

Remarks: Slope 15° 24', map-length 256'. Airshaft 72' deep.

Two reasons for the low recovery figure are that there are small unmined areas within the boundary shown, and secondly, that the complex of drives and counters connecting the northeast and southwest workings occupy a considerable area but produced very little coal.

This is the area referred to in the Introduction, within which the scale difference between base map and reduced mine-plan is the greatest encountered in this work. Using the Township Survey Plan (1897) for control, the base map scale is found to be about 1" = 540'. The scale is not uniform in the north-south (latitude) and east-west (departure) directions. The reduced mine-plan scale is 1" = 500'. Over the half-mile distances involved in the north-south and east-west directions, this results in map discrepancies that average about 200' in both latitude and departure in the N.E. corner of the workings.

On my plate, the small cross immediately N.E. of the workings is the centre of the section as plotted from the mine plan, using the N.W. corner of Sec 12 as the point of origin. The small cross to the S.W. of the above and connected to it with a dashed line is the approximate centre of the section on the base map. The distance between the crosses is 285' at a scale of 1" = 500'. The difference in latitude is 165'; in departure, 235'.

This is one of the three mine plans in the Atlas where I found the scale discrepancy between the base map and reduced mine-plan to be so great as to require especial care by the user. If the user desires to find the relationship between some point on the base map and the corresponding point on or within the mine-plan boundary, the procedure is as follows:

Determine the fraction of the total width of the quarter-section that the selected point on the base map lies both to the North and to the East of the S.W. corner of Sec 13. For example, take the center of the quarter-section (one-half North, and one-half East). The point on the reduced mine-plan that corresponds to the selected base-map point will be found 1/2 X 165' to the North of the base-map point, and 1/2 X 235' to the East of the base-map point. This assumes a simple proportional relationship between distance in latitude and departure from the S.W. corner of Sec 13, and discrepancy in latitude and departure. This also assumes uniform base-map scales in the north-south and east-west directions and this is not correct, but these differences are small. It also ignores the contribution of myself and the mine plan to the maximum-discrepancy values measured. This method will, however, bring into correspondence a point on both base map and mine plan with a maximum error probably in the range of ±35'. If greater accuracy than this is required the user is most strongly urged to refer to the abandonment plan in the archives of the Mines Division. This plan has on it the grid of the overlying streets and avenues.

In 1964 it was reported that the seam was 7' - 8' thick, and that many places were being worked under a foot or so of top coal.

There was considerable ground movement in these workings in at least the last few years of operation. In 1963 the airway (not airshaft) caved shut. In 1965 the haulage track was heaving badly. In 1966 a slight squeeze took place in the West section off the Main haulage tunnel. In 1968 the floor was heaving just off the pillar line.

Such movements in working sections of this mine are certainly understandable. In 1966 it was reported that they had high [thick] coal, a good roof, and that rooms were being cut to widths of up to 30' with very little pillar left. In no other workings in the Edmonton Area have I found reports of rooms of such width in this type of mining. In view of the fact that this mine ceased underground work less than 15 months ago, similar movements are undoubtedly taking place today (19-vi-71), though perhaps at a slower rate because the workings now are probably water-filled.

At the time of the last Mine Inspector's report (23-ii-70) two horses were still working underground in haulage.
Refs.: 1.

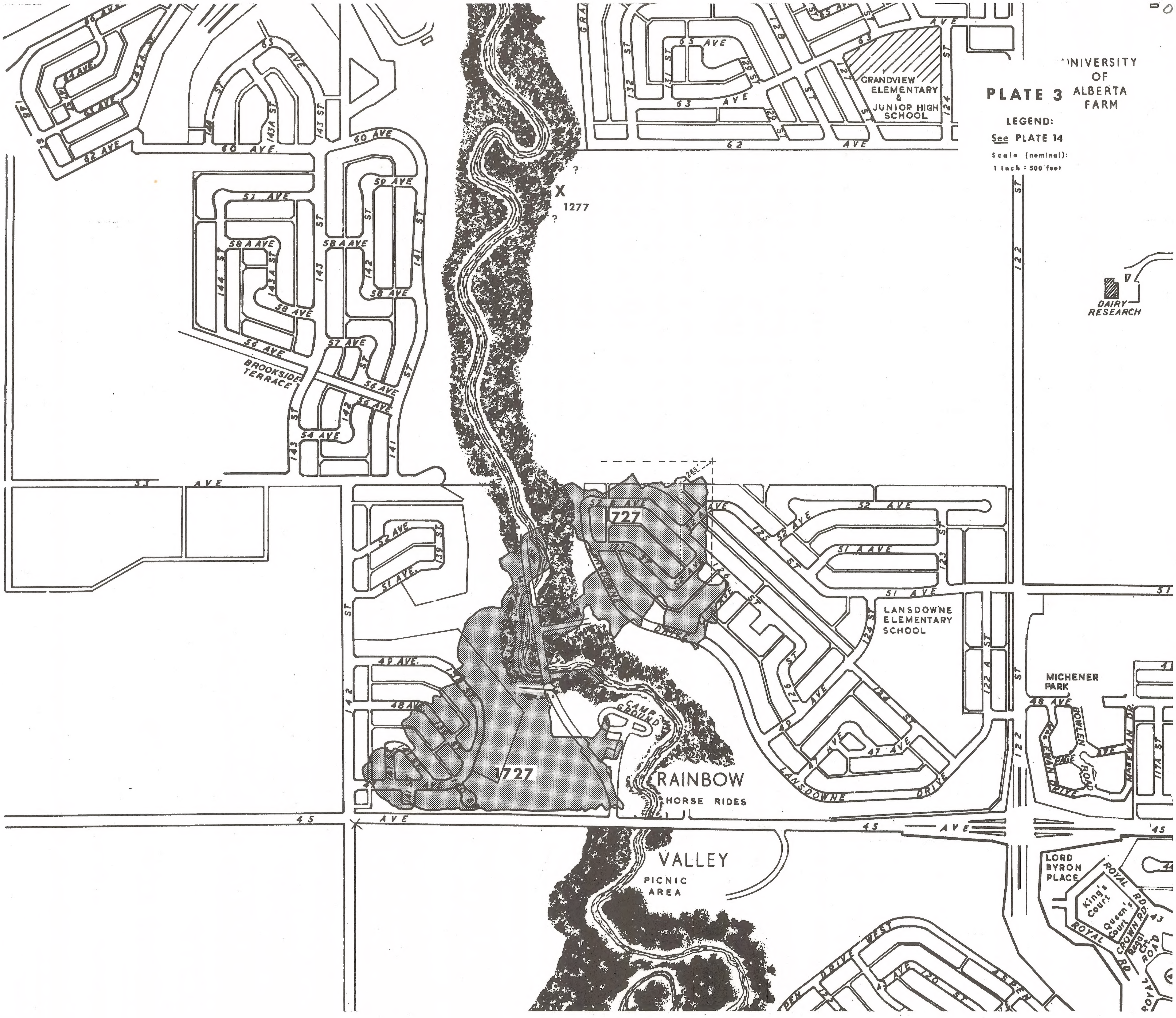


PLATE 3

LEGEND:
See PLATE 14

Scale (nominal):
1 inch : 500 feet

PLATE 4

Mine X20 (u/g). Location (uncertain): River Lots 24/26, or both. Operators: MacDonald and Kirkness. In Jan. 1886 the Edmonton Bulletin stated that the operators were 'taking coal for their own use from an 18" seam which shows on the river front of their claims a few feet above water level'. Conceivably, there was but one mine for the two of them. Most likely these workings consisted of a gopher hole on each river lot. Located on the RL 24/26 boundary for convenience.

Classed as (a) very small mine(s).
Ref.: 2.

Mine No. 49. See text with Plate 5.

Mine No. 109 (u/g). Parkdale. Location: River Lots 22 and 24. 1906-1909(?). Seam: 3' - 5'. Cover: 190' - 200'. Known(?) area: 7a. Recorded production (4 yrs of 4(?)): 19,760 tons (10.98 a.ft.). Estimate average thickness of coal mined as 4 1/4'; this indicates about 37 1/2% recovery.

Remarks: Hoisting shaft 196' deep. Airshaft, depth ?. Northern "Old Shaft": depth ?.

This mine is plotted from an unsigned, undated blueprint (in several pieces) that has on it both the Parkdale and the City (No. 49) mines, tied together by a 1000' grid. There is no survey tie-point on the blueprint. There is no labelled point of origin for the grid. Other than the mines, the grid includes Rat Creek and a portion of the C.N.R. right-of-way; nothing else.

The Parkdale hoisting shaft is shown on the grid as 2060' North and 4030' West of the hoisting shaft of No. 49. However, the position of the latter is itself uncertain, so that there is ample room for error here. I plotted the Parkdale workings from the hoisting shaft of No. 49, as that hoisting shaft is located on the final plan of No. 49.

The blueprinted survey was probably originally made during the period (1-iii-07 to 4-vii-07) that the Edmonton Standard Coal Co. managed both the Parkdale and City mines. The latest date shown against the workings of the City Mine on the blueprint is 1-i-09; no date is shown against the Parkdale workings. However, the Parkdale workings are believed to have been mapped up to about the same date. 23% of the total recorded production of the Parkdale (that for 1909) was mined after 1-i-09. The mine may have produced into 1910. Date of closure, date of abandonment; neither are known. To all intents the operator disappeared after filing the Annual Return for 1909.

The above data indicate that the u/g workings may be markedly more extensive than is shown on my plate, and the recovery percentage significantly lower than given above.

In addition to the foregoing uncertainties, Beach reported that a second seam, 4' thick and 33' lower, was also worked for a while. He stated that considerable gas was found in this lower seam and that caving occurred up into the upper workings; these drawbacks led to these lower workings being abandoned. I can add, here, that nothing in Mines Division files even hints at the existence of such lower-seam workings at this mine. It is doubtful that these 'lower workings' existed.

The northern "Old Shaft" is so labelled on the blueprint. There is nothing in Mines Division files on this shaft which is mapped as being separated from the workings by a gap of 35'. I included it within the boundary so that it might not be lost sight of. This shaft may have existed but its history is totally unknown.

One man was killed in an underground explosion of methane in Nov. 1908.

I do not know when or how, or even *if*, the shafts of this mine were ever filled.
Refs.: 1; 8; 9.

Mine No. 632. See text with Plate 6.

Edm_coal_07

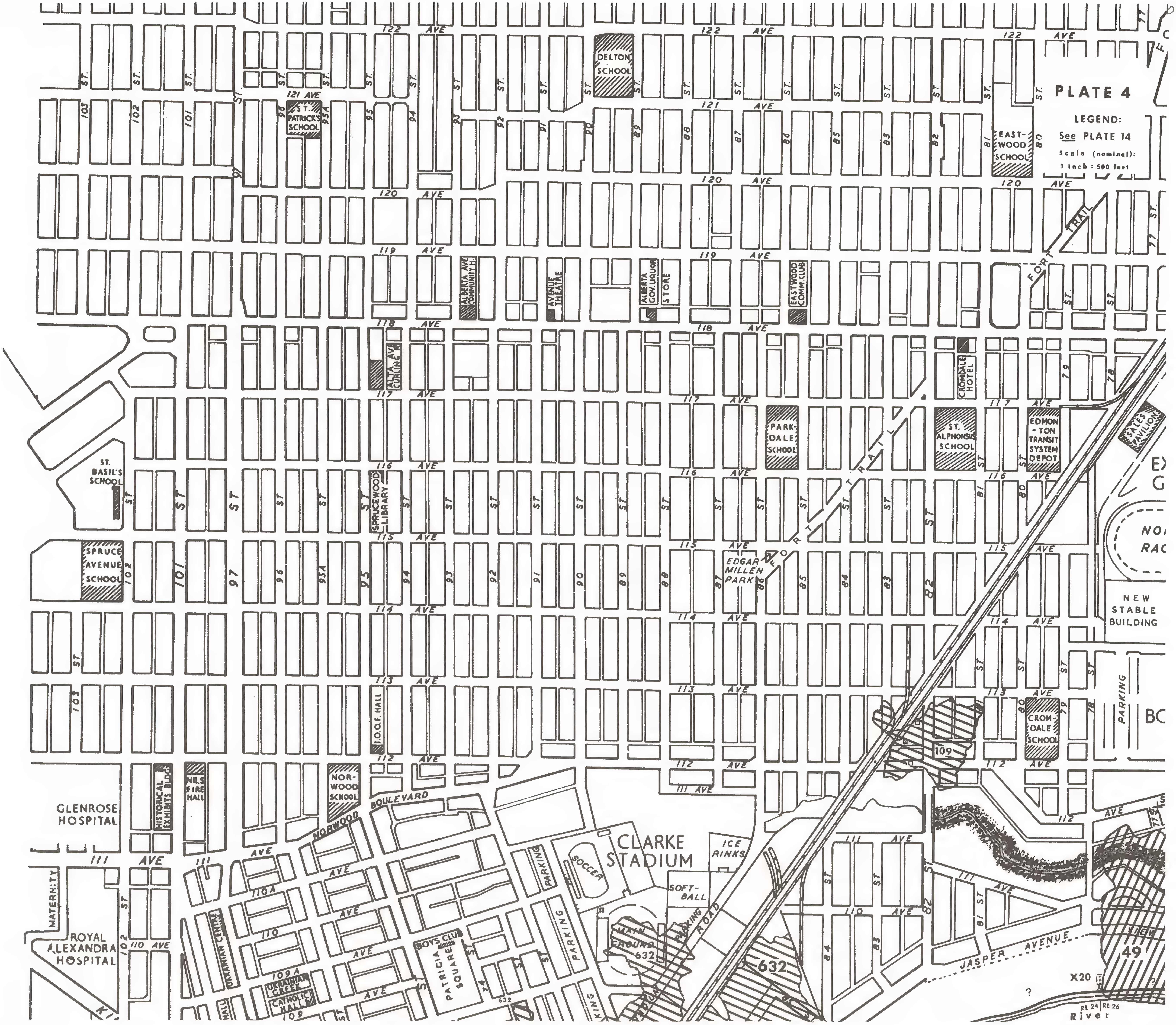


PLATE 4

LEGEND:
See PLATE 14
Scale (nominal):
1 inch : 500 feet

PLATE 5

Mine No. 49 (u/g). City (Standard) Mine. Location: River Lot 26. 1905-1923. Seams (two): 4' - 6' (Clover Bar); 4' - 5'6" (Lower Clover Bar). Cover: 40' - 185±' (Clover Bar); 70' - 110±' (Lower Clover Bar). Known area: 85 1/2a (two workings in Clover Bar seam); 1a (Lower Clover Bar seam). Estimated additional area, Lower Clover Bar: 1 1/4a (see Remarks). Recorded production (18 yrs of 19; no production in 1905): 371,094 tons (206.16 a.ft.). Estimate average thickness of coal mined at 5'; indicated recovery is about 47 1/2%.

Remarks: The Clover Bar seam workings consist of the older Shaft workings and the Slope workings, separated approximately along a line connecting the deep re-entrant in the south boundary with the shallow re-entrant in the north boundary east of 76th Street. It is not possible to separate the tonnage into that produced from the various workings.

Shaft workings: Hoisting shaft 92' deep. Airshaft (southeastern) 60' deep; internal shaft (between seams, 55' N.W. of airshaft) 32' deep. Slope workings: Slope 29°, map-length 190'. Airshaft 128' deep.

The abandonment plan, dated 15-v-23, is primarily of the Slope workings. It also has on it in green and blue the workings of the old Shaft mine with a note "Old workings of No. 1 mine taken from plan found at mine office. Blue lines show workings of No. 2 [Lower Clover Bar] seam." No survey tie-point is given on this plan, but the street grid is shown above the Slope mine. The Slope workings are plotted from the S.E. corner of the intersection of 112 Ave. South and 77th St. (on Plate 4).

According to the abandonment plan, the Slope workings stop 80' or more from the river; on the base map these workings reach nearly 100' under the river. This difference is attributed to the map-makers placement of the river-edge rather than to scale differences, for elsewhere there are no significant map-scale discrepancies. Some small part of the above difference might be attributed to river-bank erosion during the last fifty years.

It was not possible to use the street grid over the Slope mine to plot the Shaft workings. When this was attempted, discrepancies approaching 200' were encountered that were attributable to errors in the mapped relationships between Slope and Shaft workings. Instead, the hoisting shaft of the older workings was plotted 80' from the N. Saskatchewan River bank and a few feet up the right bank of Rat Creek. This approximates its position as shown on the two available plans of these old workings. This position may be appreciably in error. The workings of the Shaft mine were plotted from the hoisting shaft as point-of-origin.

Flat boreholes from the workings along the west boundary of the Premier Mine (No. 869) found No. 49's Shaft workings to be up to 90' farther to the east than was shown on the old mine plan. The east boundary of No. 49 on my plate has been corrected to show this eastward extension of the Shaft workings.

The known area (1a) of the Lower Clover Bar seam workings (which were opened up in Jan. 1914) is taken from the old mine-plan information given on the abandonment plan. The date on the old workings shown was July/Aug. 1914. Work continued in this lower seam until the mine was flooded out in June 1915. It is known from the mine inspectors' reports that the lower-seam workings were markedly extended during this 10-month interval. The Main North and counter were extended to 350' in Oct. 1914, and a 125' longwall was working in Jan. 1915. The Main East was taken out at least 250'. From this and other information in the files I have estimated the 1 1/4a extension of these lower-seam workings. The actual area of extension may be significantly greater than my estimate.

In Feb. 1914 a Mine Inspector reported that the old [Clover Bar seam] workings were heavily caved. In addition, Beach reported that considerable gas was found in the lower seam, and that this seam's proximity to the Clover Bar seam made cavings into the upper seam dangerous.

The Shaft workings workings were flooded on 28-vi-15 by the river's extreme high waters, and these workings were abandoned. The Slope workings were started immediately and were producing before the end of the year. These new workings were themselves flooded in Feb. or Mar. 1916 and the mine shut down for a number of months. The cause of the flooding of the Slope workings is not known.
Refs.: 1; 9.

Mine No. 95 (u/g). Location (uncertain): River Lot 35. Operator: R. Wills. On 10-ii-05 a mine inspector reported that the 'mine was operated by R. Wills under lease from W. Howard, R.L. 35. This is a new opening on the property, and the drift is only in 40 feet'. This last sentence can be interpreted to the effect that there were other older openings on the property.

No production record. No mine plan. Classed as a prospect.
Ref.: 1.

Mine No. 128 (u/g). Rosedale Mine. Location: River Lot 30. 1907-1909. Seam: 4' - 5'. Cover: 40' - 90±'. Known area: 5a. Recorded production (2 yrs of 3: no report for 1909): 20,955 tons (11.64 a.ft.). Estimate average thickness of coal mined at 4 1/2'; this indicates about 52 1/2% recovery.

Remarks: Hoisting shaft 66' deep. Airshaft 60' deep.

There is no abandonment plan in the files for this mine. There is an unsigned blueprint with a last date of underground survey of 21-xi-08. This has on it in red pencil over the east end of the workings "Out Feby 1909". There is no survey tie-point, nor any street grid shown. There is an undated (plane table?) tie-plan survey signed by Tom Brown which connects Rosedale's two shafts to the airshaft of the Premier Mine (No. 869), next west. However, when the Premier's workings were driven towards the Rosedale, the latter's workings were not encountered where expected.

The workings of this mine are shown on the Premier's abandonment plan, and were plotted from that plan. I assume that the discrepancy found between these two mines' plans on the Premier's drive east, has been corrected on the latter's final plan.

The Rosedale's workings as mapped are incomplete. The mine was known to be working in Jan. and Feb. 1909, and it was not until late May that the Mines Division was notified of the mine's abandonment. Thus, the extension of these workings in 1909 is unknown and without a production report cannot be estimated.

There is no record of the two shafts being filled.
Ref.: 1.

Mine No. 869 (u/g). Premier Mine. Location: River Lots 26, 28, and 30. 1920-1937. Seam: 4' - 5'6", horizontal. Cover: 40' - 185±'. Known area: 59a. Recorded production (18 yrs of 18): 257,268 tons (142.93 a.ft.). Estimate average thickness of coal mined at 5'; this indicates about 47 1/2% recovery.

Remarks: Hoisting shaft 74' deep; airshaft, depth ?. The final plan carries the workings up to the date of abandonment, 27-viii-37. No survey tie-point is shown on this plan, but it does carry the overlying street grid. The workings were plotted from the intersection of the RL 26/28 boundary with the north side of Ada Boulevard, as shown on the final mine plan. There is no significant discrepancy between base map and reduced mine-plan.

In 1932 the Company agreed to pay the City approximately $1500. - for repairs to Ada Boulevard. The damage was caused by subsidence over the mine workings.

The workings under the terrace on which the Highlands golf course lies were plagued with cave-ins. Frequently, these caves produced water or running quicksand because the bedrock over the coal was very thin in many places. This resulted in a number of large holes caving through to the golf course. These cave-ins through to the golf course continue to the present time (May 1971), 34 years after mine closure. This past spring after the frost went out of the ground, there were seven cave-ins that, at the surface, were up to ten feet in diameter and up to seven feet deep. These occurred on the 13th (2), 14th (3), 17th (1), and 18th (1) holes. The Head Greenskeeper of the course said that there are similar occurrences every spring, and occasionally after very heavy rains. It is most apparent from their number and frequency of occurrence that such cave-ins will continue to occur for many years.

A curved fault is mapped for about 700' in the S.E. part of these workings. It trends east at its easterly mapped end (about 450' north of the river), and S.S.W. at its southerly end where it intersects the river barrier-pillar about 600' west of the S.E. corner of the workings. The fault has a downthrow of five feet on its north and west sides.
Refs.: 1; 9; Winkel, 1971.

Mine No. 1357. See text with Plate 7.

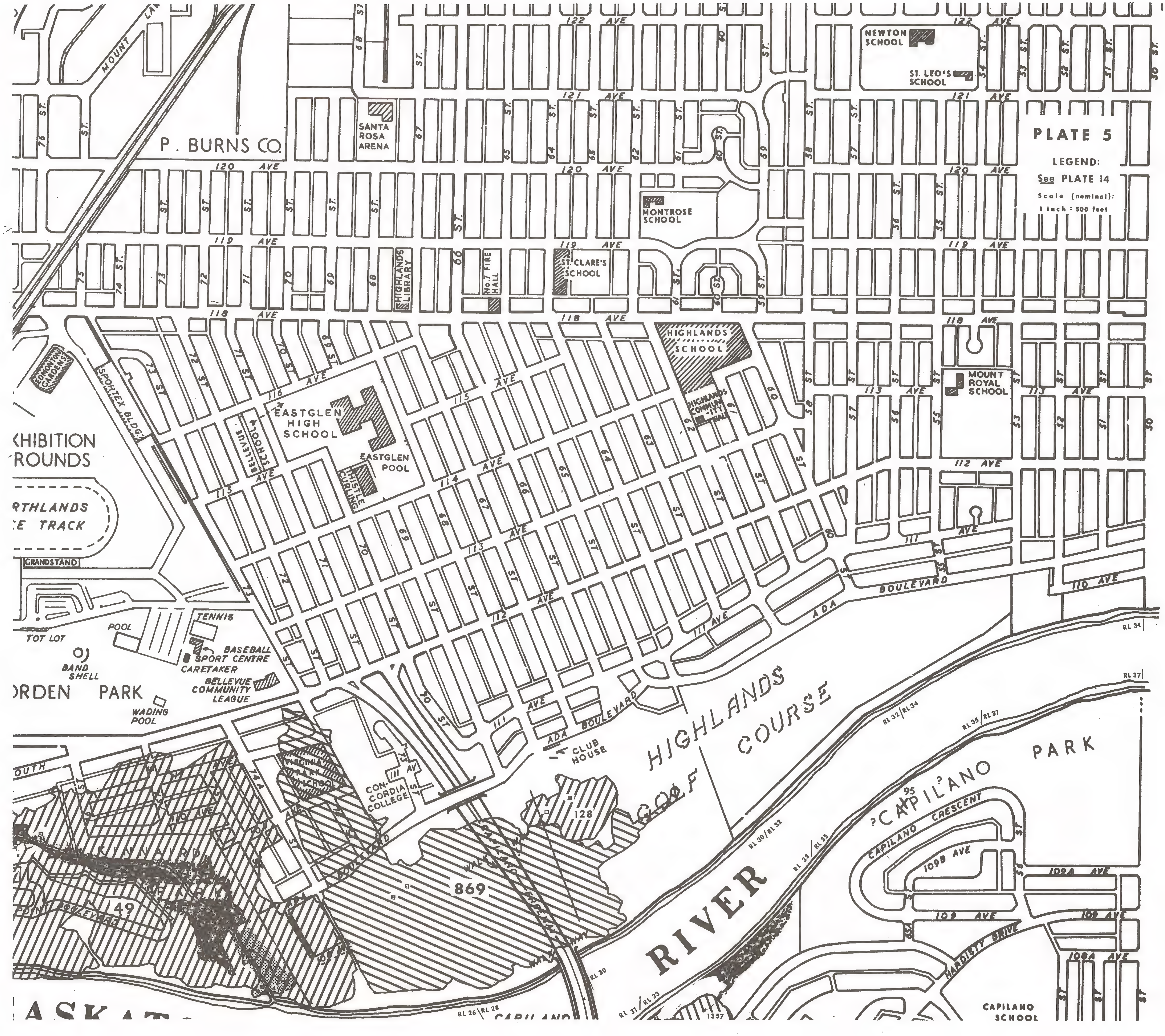


PLATE 5

LEGEND:
See PLATE 14

Scale (nominal):
1 inch : 500 feet

PLATE 6

Mine X3 (u/g). Imperial Mine. Location (approximate): River Lot 23A. 1880-1881(?). Seam: 3+'. Cover: up to 30±'. Production unknown.

The Edmonton Bulletin reported in Dec. 1880 that they 'commenced taking out coal for the Company' and, later, referred to the Zero Mine (X10) on the opposite side of the creek. Maximum known depth of workings: 80'.

There is a very limited area within which mines in this seam could be opposite each other on Dowler's Creek, and this mine and X10 are positioned accordingly.

Subsequent history unknown. Classed as a very small mine.
Ref.: 2.

Mine X7/6 (u/g)(on Plate as No. 6). Humberstone's Mine. Location: River Lot 12. 1881-1901; 1905. Seams (three): upper, 2'9" - 3'; lower, 3'; 1905 prospect, unknown. Cover: upper (western) workings, up to 80±'; lower (eastern) workings, up to 90±; prospect, unknown, but greater than the foregoing. Areas (two workings): western, estimated 1 3/4a; eastern, known 1 3/4a; prospect, unknown, but very small. Production of record (both workings, last 4 yrs of 21): 3,887 tons; 1905 prospect, 20 tons. Estimated total production: 8,500 - 10,000 tons.

Remarks: Final mine plan for the eastern, lower-seam workings dated 26-xii-01, and at 1" = 25'. The surveyor's tie-point was a "Town Plug" at the N.E. corner of the intersection of 101st Ave. (labelled "Jasper Ave." on the plan) and 96th St. I plotted these workings from the intersection of the centreline of 96th St. with the north side of 101st Ave. as shown on the final plan's location map. Airshaft, eastern workings, 45' deep.

The western workings are located from a file memo dated 15-xi-98 which states that these workings are 'west of the lower workings about 200' and in a different seam of coal about 11' higher'. At this time the depth to the face in the western workings was 300'. It is probable that these workings also had an airshaft, for a Humberstone letter of 11-xi-98 said the 'tunnels run horizontally; no perpendicular shafts except for ventilation; no gas in mines; 3 men employed in each mine'. The estimated size of these workings is such as to have permitted a total production from both workings of between 8,500 and 10,000 tons in the 21-year span of this mine.

I do not know when the western workings were shut down, but it was after Nov. 1898. Mining in the eastern workings stopped in 1901. The Mine Inspector reported in Nov. 1901 that 'this mine is practically finished as a great landslide has taken place and closed all the workings except a small drift taking out a few pillars on the river bank'. Beach, however, said that 'indications of ground settlement in the town as a result of the underground workings' was a factor in Humberstone's abandonment of this mine.

The information on the 1905 prospect is found on a 1905 Annual Return in Folder 1, Mine No. 43, whereon Humberstone had the following notes: 'This is the old mine on RL 12 where the bank had shifted toward the river in 1901 and 1902. I had two men opening a new tunnel in an under seam which has not been worked much as yet'. Depth of tunnel: 50'. This prospect is not shown on the plate.

I believe the western workings are the oldest, but this may not be correct. An 1894 photo shows the Humberstone Mine 70' - 80' above the river in what appears to be the lower seam, with no evidence of workings 200' westward. It is therefore possible that the upper-seam workings on my map should not reach so far to the eastward. If these workings are the younger (that is, started later although perhaps finished earlier), they should not overlap the lower-seam workings. The lateral extent of these western workings is subject to question in any event, for the mapped width of the workings is no more than a reasoned estimate.
Refs.: 1; 2; 6; 9.

Mine X10 (u/g). Zero Mine. Location (approximate): River Lot 25A. 1881-1882(?). Seam: 3+'. Cover: up to 40±'. Production of record: 120 tons.

The Edmonton Bulletin reported in Jan. 1881 that 'The Zero Company on the opposite side of the creek [from X3] are putting up a building, but have not commenced at the coal yet. Both have contracts with the H.B.C.'.

In the middle of March the mine closed for the season, having produced about 70 tons. In the 1881-1882 season this mine supplied 50 tons to the mill across the river. The total production of this mine is not known.

There was a small cave in the Zero drift when it was in about 30', when 1 1/2 tons dropped off the roof shortly after the operator walked out from the face. The cave is understandable; the operator had neglected to timber his drift.

The mine is positioned to be opposite X3, which see. The subsequent history of this operation is unknown. Classed as a very small mine.
Ref.: 2.

Mine X11 (u/g). Location (uncertain): River Lot 12. Operators: Robertson and McLean. 1882-1884(?). Seam: 3'2" - 3'5". Cover: up to 40±'. Production of record (season of 1882-1883): about 270 tons.

The Edmonton Bulletin initially reported on the operation of this mine in Nov. 1882, stating that it was in RL 14 but later correcting this to RL 12. The drift was 7' X 6' with rooms to either side. Closure in the spring of 1883 was forced by a warm-weather inflow of water.

The mine was producing in Oct. 1883; nothing is known of its subsequent history. It is positioned in the western portion of RL 12 because mines X7/6 and X28 appear to have occupied the rest of the river lot.

Classed as a very small mine.
Ref.: 2.

Mine X14 (u/g). Location (uncertain): River Lot 23A. Operator: James McKernan. 1883-1884(?); 1892-1893(?).

In Nov. 1883 the Edmonton Bulletin reported that the operator 'opened the coal seam in the valley of the creek in his claim, south side'. Again, in Oct. 1892, the paper said that 'Jas. McKernan is opening a coal seam on his property, south side'.

These are regarded as separate drifts. I have positioned them side-by-side adjacent to X3, about the only possible position still in the valley of Dowler's Creek on McKernan's property (RL 23A). Nothing else is known of the history of these two drifts.

Classed individually as very small mines.
Ref.: 2.

Mine X16 (u/g). Ross' Gopher-Hole Mine. Location (approximate): River Lot 6 (and RL 8(?): See Remarks). 1883-1897. Seam: 3'. Cover: up to 110±'. Estimated area: about 3a. No recorded production. Estimated production: 7,000 - 9,000 tons.

Remarks: Airshaft (position approximate), 75±' deep; single main entry. No mine plan. The drift entry is positioned primarily on the basis of information from the operator's son. This was cross-checked by information from the literature and by topographic data from a picture in the files of the City's Historical Division. The airshaft position was scaled from three different photos in the Brown collection, and the derived location checked with the operator's son. This position is about 100' farther east than the "Old Entry" shown on a map in the collection of the City Engineering Dept.

This mine opened in Nov. 1883, after drifting through 75' of glacial debris before striking solid coal. The airshaft was completed in April 1889. In the fall of 1890 Donald Ross brought a man in from Lethbridge (likely from the Galt Mines) to operate his mine - probably the district's first 'mine manager'. The last advertisement offering coal from the Ross Mine appeared in the Edmonton Bulletin of 3-vi-97. I take this to mark the abandonment of this mine.

The possibility exists that these workings extend into RL 8. Ross was reported as mining in RL 8 by the Bulletin in Nov. 1896, and the paper had the other eight mines in operation at this time located accurately in the same article. See also Remarks, Mine X33.

The estimated area of the mine is based on a total production of between 7,000 and 9,000 tons in the 15-year span of this mine. This may be too great a figure.

The orientation of the workings - length greatest parallel to outcrop - is not common in the area. It is predicated on the east-west extent indicated by the distance between drift entry and airshaft, and by the drilling results at the southern edge of the Oxford complex. These latter found old mine workings in only several holes of the extreme southern east-west line of test-holes. A line of back-up holes on 15' centres, oriented S.W. - N.E., north of those holes that encountered the old workings, struck nothing but solid coal in the seam. These findings appear to delimit the northern extent of the workings, here.

Immediately west of the above test-holes is where the College Avenue (Macdonald Drive) School was torn down in the early Twenties, because of foundation damage due to subsidence into the Ross workings. This school was located in about the centre of the lawn-bowling green that was in front of the old Public Library and Legion Hall until several years ago. It is not known how far to the north the mine workings extended under (or past?) the school site.

Possibly the workings should be oriented to the N.W. from the drift and airshaft, rather than to the west, but this cannot be determined from the evidence in hand.

In addition to the subsidence that affected the College Ave. School, a 200' X 60' slump block settled over the old entry and shallow workings some years ago. Above the block, McDougall Hill Road shows the effects of subsequent minor settlement, in that the outer curb has dropped below grade over a length of about 250' and the upper portion of the road has required repeated pavement repairs.
Refs.: 2; 4; 5; 6; Cashman, 1958; Hardy, 1971; Ross, 1971; Tyrrell, 1887.

Mine X17 (u/g). Location (uncertain): River Lot 23A. Operators: Kamer and Caverhill. 1884-1886(?).

In Nov. 1884 the Edmonton Bulletin reported that the operators 'intend opening a coal drift on the south side of Dowler's Creek', and again in Jan. 1886 that 'E. Caverhill was working a coal seam on J. McKernan's claim, south side'.

This mine may have been closer to Dowler's Creek than I plotted it. Nothing else is known of this operation.

Classed as a very small mine.
Ref.: 2.

Mine X23 (u/g). Location (uncertain): River Lot 14. Operators: Hall and Moran. 1887-1892(?).

In Sept. 1887 the Edmonton Bulletin reported that the operators 'have secured a five-year lease of the privilege of mining coal under the McLeod estate [RL 14] in town'.

A drift was opened in Dec. 1887; nothing is known of subsequent operations. This mine may have operated until 1892 but it probably did not.

Classed as a very small(?) mine.
Ref.: 2.

Mine X24/10 (u/g)(on Plate as No. 10). Milner's Mine. Location (approximate): River Lot 20. 1888-1904. Seam: 3'6" - 4'. Cover: up to 90±'. Estimated area: about 6a. Recorded production (1898-1903, 6 yrs of 17): 6,379 tons. Estimated total production: 12,000 - 15,000 tons.

Remarks: No mine plan. Three main entries to virtually separate workings, though I have plotted them as one. Estimated total area may be too large by 20%.

The youngest (southwestern) entry, started in 1901(?), is positioned on the basis of an entry to 'Milner's Mine' shown on a map in the collection of the City Engineering Dept. The depth of this main entry was 500' at the end of 1902, according to information on the Annual Return for that year. The Mine Inspector reported on 23-ii-02 that there was an airshaft 45' deep in these southwestern workings; its location is not known.

John Milner, in a letter of 17-ii-05, said 'the mine was between two abandoned mines belonging formerly to William Thomas (deceased)[X58] and Alex. McDonald [X34], which were only about 200' apart (but which had been worked into one another in several places)'.

The next older (central) main entry was started in 1897(?). The Mine Inspector reported in Feb. 1900 that the seam was 3'6"; the depth of the main was 300'; and side drifts were 150' to the right and 90' to the left. A Milner letter of 17-xii-98 said there was an airshaft in 'the new mine' that was 45' deep; its location is unknown. This entry was positioned on the topographic evidence found on two photos of the Brown collection. These showed the entry on the left bank of a ravine which I took to be the ravine that reaches under Jasper Ave., here.

The oldest, northeastern main entry had a depth of 800', according to an inspector's report received on 4-ii-98. The seam here is 4' thick, and there is a small, upcast airshaft (depth unknown) to the main, 280' in. This entry was positioned as a 'best-fit' proposition, so that with an orientation roughly at right-angles to the outcrop the 800' depth carried the workings near to the RL 18/20 boundary. This checks with the anecdote related by Cashman, where water used to flood a skating rink at 105 Ave. and 92 St. disappeared, to re-appear coming out of Milner's mine entrance.

The opening of this mine and some of its history up into April 1900 is given in the Edmonton Bulletin. The filed history of these workings indicates that there were at least six drifts into them and probably more. I have plotted only one besides the mains; this one is positioned in the ravine by inference from filed material.

Bear in mind that the mapped lateral extent of these workings perpendicular to the drifts is subject to question.
Refs.: 1; 2; 4; 5; Cashman, 1964.

Mine X25 (u/g). Location: unknown. Operator: C. Sandison. 1889(?) - 1890(?).

The Edmonton Bulletin reported in Feb. 1890 that 'Humberstone [No. 6] and C. Sandison are running their mines to the full extent. Mines are all on the north side within town limits'.

Nothing else is known of Sandison's operation. Classed as a very small mine.
Ref.: 2.

Mine X28 (u/g). Moran's Mine. Locations (approximate): River Lots 12 and 14. 1892-1901(?). Seam: 3'. Cover: western workings, up to 90±'; eastern workings, up to 70±'. Estimated areas: western, about 3a; eastern, about 1a. There is no record of production. Estimated production (both workings): 6,000 - 8,000 tons, but this is most uncertain.

Remarks: There is no mine plan. It is almost a certainty that originally the mine number, 14, was assigned to this mine. Unfortunately, mine inspectors changed just as Moran left the RL 14 workings and commenced mining in the Clover Bar area (Mine No. 9, Folder 1: Smith letter of 23-ii-02 re Moran operating Cunliffe property). All official records of Moran's RL's 12 and 14 operations are found in the file of Mine No. 14. However, this number (14) is now so strongly attached to the Clover Bar area and the Clover Bar Mine (No. 9/14/79) that no attempt is made to correct the original mistake.

There is no question but that Moran's older workings were in RL 12. In Oct. 1892 the Edmonton Bulletin reported that 'S. Moran has opened a new coal mine on RL 12, Edmonton'. In Mar. 1895 the paper reported on a Supreme Court action initiated by Moran against Graham (X31) for trespass to coal mine and wrongful conversion of coal.

The Mine Inspector reported (undated) in early 1898 that the main tunnel was 700' in depth, and that there were several entrances to abandoned parts of the mine. I have plotted this mine against the RL 12/14 boundary. Even so, there scarcely seems to be room for it, as its size appears from the inspector's descriptions. It may well be that these workings are more extensive to the S.W. That is, that they overlie the surveyed eastern, lower-seam workings of Humberstone's Mine even more than is shown on the plate. Only one opening to these workings is plotted, to avoid undue clutter.

The Mine Inspector reported in Feb. 1899 that it was 150' to the face in Moran's new mine and that the side drifts were 100'. Later the same year the depth was reported as 180', and the seam 3' thick. On 1-iv-99 it was reported that an airshaft had been sunk; its location is not known. The same report gave the location of the mine as 'a few hundred feet east of Humberstone's mine'. Thus, these workings are plotted as 500' east of Humberstone's eastern workings. The mapped lateral extent of both sets of these workings is subject to question.

It is probable that these younger workings continued to operate until the landslide of late 1901 which closed the nearby Humberstone workings. The estimated size of these eastern (X28) workings is based on this probability.

In Feb. 1900 a Mr. A. Harrison surveyed these workings and completed a plan. Unfortunately, no copy of the plan is in the records.
Refs.: 1; 2.

Mine X31 (u/g). Location (approximate): River Lot 12/14 boundary area. Operator: W. J. Graham. 1892-1896.

The Edmonton Bulletin reported in Nov. 1892 that the operator 'has opened a coal seam under the "Cliff" property, east end of town'. In March 1895 Graham was defendant in a court action initiated by Moran of the adjacent, western X28 workings. In Dec. 1895 Graham reported having found a 5' seam of coal on his property, RL 12, and that the seam was below those normally worked.

Such evidence as I have indicates that Graham's mine was in RL 12. The physical necessities of space, however, dictate that this mine must - at best - have been squeezed between Moran's western X28 workings and the RL 12/14 boundary. I have plotted this mine on the boundary, but it may be that Graham's workings should have been plotted 50' - 100' farther to the west.

There is no evidence as to the depth of these workings or as to the production from them. I have shown this as a very small mine; it is possible that its production would merit the next larger category. See also X38, Plate 9.
Ref.: 2.

Mine X32 (u/g). Location (uncertain): River Lot 10. Operator: F. C. Armstrong. 1892-1893(?).

In Nov. 1892 the Edmonton Bulletin reported that the operator 'has opened a coal drift just above the lower ferry landing in town'. The lower ferry landing at this time was pretty close to the RL 8/10 boundary and I should, perhaps, have plotted this mine upslope of (above) this point. However, a map in the collection of the City Engineering Dept. carries a notation of "Old Entrys" across the east two-thirds of RL 10, and RL's 12 and 14. For this reason, I placed this mine a bit east of centre in RL 10.

Nothing else is known of the history of this mine. Classed as a very small mine.
Refs.: 2; 4.

Mine X33 (u/g). Location: River Lot 8. Operators: Bass and Brabant; Taylor. 1892-1898(?). Seam: probably about 3'. Cover: uncertain. No record of production.

Remarks: In Mar. 1892 the Edmonton Bulletin reported that 'D. Ross has been granted the coal mining right under RL 8, D. McDougall estate'. However, it is possible that Ross never exercised this right but sold or sub-leased it to H. B. Bass, (but see Remarks, Mine X16). In Sept. 1893 the paper said 'Mr. Bass is erecting a dwelling on the river front of RL 8 and is opening a new coal drift there'.

The position of this mine's entry is known quite accurately. The elevation of the seam is known, here, from drilling done under the Oxford complex. The location of the entry on the seam with respect to the adjacent RL 6/8 boundary, is defined in Certificate of Ownership 145G (N.A.L.R.D.), dated 28-iii-94. At the time this certificate of title was issued, Bass and Brabant were apparently partners.

In 1895 the property passed to S.S. Taylor via a mortgage sale. In Nov. 1897 a resolution at the Town Council meeting on the 4th was 'that burning coal slack at S. S. Taylor's coal mine be drenched'. In Sept. 1898 one of the properties offered to the Town by a realtor, at a Special Council meeting, was the 'discontinuance of coal mining under RL 8', i.e., the coal rights. I do not know that this mine was operating at this time.

Evidence of small-scale earth-slips is apparent on the slope in the area above this old entry.

Classed as a small mine; it may belong in the very-small category.
Ref.: 2.

Mine X34 (u/g). Location (approximate): River Lot 20. Operators: McDonald and Carruthers. 1893-1896(?). Seam: probably 3'6" - 4'. Cover: probably up to 50±'.

The location of this mine was spelled out by John Milner (X24/10, which see) although I do not know on which side of Milner's southwestern main entry it lies. From Milner's description of this operation and the adjoining X58, the depth of both these workings was of the order of 150' - 200' and they contacted each other (X34 and X58) at several places.

There is no record of production for this mine, but its production was significant. The Edmonton Bulletin reported in Dec. 1893 that the operators shipped a car of coal to Calgary. In Oct. 1894 this mine won the contract to supply the Town with coal for a year. Again, in 1895, on a joint tender(?) with Milner, the Town contract was won.

Classed as a small mine; may belong in next smaller category.
Ref.: 2.

Mine X39 (u/g). Location (uncertain): River Lot 25A. Operator: Alex. McDonald. 1894-1895. Seam: 4+'. Cover: uncertain. No record of production.

The Edmonton Bulletin reported in Jan. 1895 that 'A new coal mine has been opened on J. Dowler's property, south side, at the grade going up to the baseline. The seam is over four feet thick'.

Advertisements in the South Edmonton News, starting on 8-xi-94, indicate that the above referred to McDonald's operation. No advertisements appeared in this paper for this mine after 24-i-95.

The mine is positioned for favourable access to the grade (the old Dowler's Hill Road) up to the baseline (101st Avenue).

Classed as a very small mine.
Refs.: 2; 3.

Mine X42 (u/g). Egge's Mine. Location (uncertain): River Lot 25A. 1894(?) - 1898. Seam: probably about 4'. Cover: uncertain. No record of production.

Remarks: All government records of this mine are found in the file of Mine No. 18, with which it was confused.

The Edmonton Bulletin reported on this mine in Feb. 1895 in such a fashion that the implication was that it was an established and well-known operation at that time. An advertisement in the paper in Mar. 1898 said that the mine (renamed the 'Superior') had been bought by J. H. McCartney. However, in Sept. 1898 the Alberta Plaindealer reported that McCartney was permanently settled in Rossland, B.C. This apparently marked the abandonment of this mine for the Mine Inspector reported in Feb. 1901 that 'nothing had been done by McCartney to this mine up to the time of my visit there in Feb. 1900'.

An undated report by the inspector written prior to 9-ii-98 said that there were three employees, the length of the main was 140', and that output was 50 tons/month at that time. In view of the several operators of this mine, there were probably more entries than one to these workings.

The mine is positioned on the plate for ease of access to the old Dowler's Hill Road.

Classed as a very small mine.
Refs.: 1; 2; 3.

Mine X45/12 (u/g)(on Plate as No. 12). Steeve's Mine. Location (uncertain): River Lots 25 and 25A(?). 1896-1903(?). Seams (two): lower, 2'9"; upper, 3'6" - 4'. Cover: lower workings, probably up to 40±'; upper workings, probably up to 90±. Estimated area: about 2 1/2a. Recorded production (1 yr of 8(?)): 920 tons. Estimated total production in the range 5,000 - 6,500 tons.

Remarks: There is no mine plan. The mine is positioned on the plate partly by inference from descriptions, partly by topographic site and relationship to Mine X56/4/5 as shown on a photo in the Brown collection, and partly by assumption. The photo shows this mine 180-200 yards downstream of X56. This agrees with an inspector's report of Apr. 1899 which speaks of 'Steeve's Mine, a few hundred feet east of the North Star Mine' (X56).

In March 1896 the Edmonton Bulletin reported that prospectors had found a 4' seam on the Dowler property. This mine was producing from this upper seam in November of the same year.

The Mine Inspector reported in Oct. 1898 that the upper-seam workings were 300' to the face, and the seam was 3'6". The lower-seam workings were 120' to the face, and were separated from the upper by about 11' of strata. A report in Feb. 1899 said that there was a shaft connection between the two sets of workings. For this reason I have mapped a slight overlap between the workings; the overlap may have been more or less than is shown. In Feb. 1900 the depth to the face of the upper workings was 350'.

New operators in early 1901 abandoned the old workings and put in a new drift. In early 1902, different operators put in another drift and drove a connection to the 1901 workings.

It is not known when mining stopped here. A memo in the file states that the Mine Inspector reported on 22-ii-04 that the mine was 'abandoned, covered by slide'.

Although the lower-seam workings are shown on the north of the main workings and the 1901 and 1902 drifts on the south, this may be the reverse of their actual positions. In addition, the mapped lateral extent of these workings is subject to question.
Refs.: 1; 2; 3; 5.

Mine X46 (u/g). Location (uncertain): River Lot 14. Operator: C. Vollrath. 1896-1897. No record of production.

The Edmonton Bulletin reported in Nov. 1896 that Moran (X28), Graham (X31), and Vollrath were mining on RL's 12 and 14. Graham's mine was next east of Moran's X28 western workings, so I have placed Vollrath's mine east of Graham's, toward the centre of the river lot.

The last advertisement for coal from this mine appeared in the Edmonton Bulletin of 24-vi-97. I assumed that this marked the abandonment of this mine.

Classed as a very small mine.
Ref.: 2.

Mine X47/15 (u/g)(on Plate as No. 15). Coit's Mine. Location (approximate): River Lot 20. 1896-1902. Seam: 3'8". Cover: up to 90±. Estimated area: about 4a. Recorded production (2 yrs of 7): 847 tons. Estimated total production: 5,000 - 6,500 tons.

Remarks: Two main entries and an airshaft associated with each: N.E. airshaft, 26' deep; S.W., 30' deep. The location of the N.E. airshaft is not known.

There is no surveyed mine plan. There is a crude, undated sketch-map of uncertain orientation at 1" = 100', made by the last operators (1901-1902). This shows the S.W. main entry, the airshaft, and the connection between them; little else.

This mine is positioned in part on a Feb. 1899 Mine Inspector's report that this mine was about 600' east of Milner's Mine (No. 10), and in part as a 'best-fit' against the known upper-seam workings of Mine No. 632. The two main entries are known to be 115' apart from a Mine Inspector's report and sketch of Apr. 1900.

The same sketch showed the oldest (northeastern) entry as 700' deep and the younger entry as 500' deep. A caved and blocked ventilation cross-cut between the main entries was repaired and completed in Oct. 1900 at a depth of about 500'. Thus, minimum depths for both entries are known. The width of the workings perpendicular to the entries is not so well known. If I interpret a Feb. 1899 report correctly, the width of the old workings was only 80', but this is most unlikely. A Mine Inspector's report of Feb. 1900 stated that the side drifts in the southwestern workings were 175' long. This would give these workings a minimum width of 175' and a maximum width of 350'. Obviously, the mapped lateral extent of all these workings as I have estimated them, is subject to question.

My estimated boundary is a compromise between these widely divergent values. It may well be, considering the low production reported for 1898 and 1901, that both my estimated total area and estimated total production are too great. However, it is difficult to understand how they could drive such deep workings without recovery of the estimated tonnage. The estimate is based on 3 1/2' of coal mined and about 25% recovery. The recovery value is set so low because there were five sets of operators, and multiple operators almost always mean low recovery.

The last operators were reported in Feb. 1902 to be working the mine on the longwall system. The inspector said that this was the first use of this system in the district, and that it was working well.

Unfortunately, we do not know how well the system worked in terms of tons produced, for no Annual Return was filed for 1902. The Mine Inspector reported that 'the lessees, I think, had to leave the country'. Upon enquiry, the owner of the coal, Ken MacDonald, verified this and said the operators 'have left the country, whereabouts unknown'.
Refs.: 1; 2.

Mine X56/4/5 (u/g)(on Plate as No. 4). Martin's (North Star No. 2) Mine (See X29, Plate 8). Location (uncertain): River Lot 25A. 1898-1903(?). Seams (two): lower, 3' - 4'; upper, unknown, but thin. Cover: lower seam, probably up to 90±'; upper workings, probably up to 40±'. Estimated area: about 2a. Recorded production (5 yrs of 6): 4,000 tons.

Remarks: There is no mine plan. It is known from various reports that the main (lower-seam) workings originally consisted of two separate mines with entries close together. In Feb. 1900 the inspector reported that the main roadway in each mine extended 315'. There was no airshaft in the 'west' mine.

The 'east' mine had a dog-leg tunnel driven on a thin seam 24' above the main workings. The roof of the lower seam caved all the way up to the thin seam at the second crossing of the dog-leg. Apparently, the cave waste was loaded out, and this hole was used as an internal airshaft. The upper-seam workings were apparently not extended beyond this. The dog-leg drift is on the plate, but I show no upper-seam workings there.

This mine is positioned on the plate partly on topographic considerations with some evidence from a photo in the Brown collection, partly on inference derived from the records, and partly on the assumption of easy access to the old Dowler's Hill Road. The photo also yielded the information that the main workings were about 55' above ice-level on the river.

The 'east' workings were abandoned in 1900 and a new drift opened near the old one. It was the opening of this new drift immediately after a change of operators that resulted in the assignment of the mine number, 5, to this mine.

In Nov. 1901 the Mine Inspector reported that a great landslide had taken place here. This necessitated new workings being developed. The operators had great difficulty in finding solid coal at this time. They encountered extensive unmapped workings that were closed-up tight.

According to the Annual Return for 1902 these new workings consisted of two parallel tunnels, 20' apart; their depth was not specified. Production ceased in May after an output of 500 tons. Bear in mind that the mapped lateral extent of all these workings is subject to question.

The mine apparently operated in (part of?) 1903 (Coal Mines Branch Annual Report, p. 10), but the Mine Inspector reported it abandoned prior to 22-ii-04.
Refs.: 1; 3; 5.

Mine X58 (u/g). Location (approximate): River Lot 20. Operator: William Thomas. Period of operation unknown, but abandoned prior to 1898. Seam: probably 3'6" - 4'. Cover: probably up to 50±'. No record of production.

See remarks under Mine X34. This mine and X34 may be in reversed positions to either side of Milner's (X24/10) southwestern entry, but so far as I know this would make little difference in the data presentation.

Information on this mine is found in John Milner's letter of 17-ii-05 in the file of Mine No. 10. These workings apparently had a depth of 150' - 200' and they contacted the workings of X34 in several places. The entries of X58 and X34 were about 200' apart.

Classed as a very small(?) mine.
Ref.: 1.

Mine X66 (u/g). Location (uncertain): River Lot 25. Operator: J. S. Edmonton. 1889(?) - 1890.

The Edmonton Bulletin said in Feb. 1890 that 'On the south side coal is being mined - - - on J. Dowler's claim by J. S. Edmonton'.

The location of Edmonton's mine on Dowler's property (RL's 25 and 25A) is not known. However, I have plotted this mine at the place where the Dawson Mine surveyor had mapped an abandoned drift-entry on the final plan of the Dawson Mine (No. 155). The actual extent of the underground workings behind the entry shown on the Dawson final plan is unknown.

There is no record of the production from Edmonton's mine. It is classed as a very small mine.
Refs.: 1; 2.

Mine No. 4. See Mine X56/4/5.

Mine No. 5. See Mine X56/4/5.

Mine No. 6. See Mine X7/6.

Mine No. 10. See Mine X24/10.

Mine No. 12. See Mine X45/12.

Mine No. 15. See Mine X47/15.

Mine No. 18/45 (u/g)(on Plate as No. 18). McKernan's Mine. Location (approximate): River Lot 23A. 1901-1906. Seams (two): lower, 4'; upper, 3'6". Cover: lower workings, up to 80±'; upper workings, up to 50±'. Estimated total area: about 1a. Recorded production (3 yrs of 6): 2,969 tons (no production in 1903; little or no production in 1904).

Remarks: Early correspondence in this file concerns Mine X42 in RL 25A, which was confused with this mine.

There is no plan of this mine. It is positioned on the bases of information on a map in the collection of the City Engineering Dept., and of information taken from a photo in the Brown collection.

McKernan amply annotated the Annual Return for 1901, and from it we learn that the mine opened in May, and the main drift (lower seam) was in about 250'. Also, the upper-seam ventilation drift (4' X 3 1/2') was in 130', 15' above the lower workings. An internal airshaft connected the upper drift and a side drift off the lower main, 130' in. Apparently, upper-seam workings were no more extensive than this, and only the 130' drift is shown on the plate.

In Nov. 1902 the Mine Inspector reported a new opening to the coal, with no airshaft connection. The mine changed hands in late 1902-Jan. 1903, and was reported not to have operated in 1903, or in 1904 until at least November, when operators again changed.

The new operator commenced to repair and re-timber one of the old drifts, but apparently he shortly abandoned it. The inspector reported in Feb. 1905 that there was a new opening on the property, in about 100'. Shortly afterwards (18-ii-05) the operator reported to the Department that he was opening a 'new mine'. As a result of his letter a mine number, 45, was assigned his 'new mine'. The file of 'Mine No. 45' has in it a single form letter - nothing else, for the records of this operation were kept where they belonged, in the file of Mine No. 18.

Later in 1905 an airshaft 25' deep (location unknown) was connected to the new workings. The operator did not find this mine a commercial success and abandoned it in the spring of 1906.

The mapped lateral extent of these workings perpendicular to the drifts is subject to question.
Refs.: 1; 4; 5.

Mine No. 45. See Mine No. 18/45.

Mine No. 50 (u/g). Baldwin's Mine. Location (approximate): River Lot 20. 1900(?) - 1904. Seam: about 4'. Cover: up to 90±'. Estimated area: about 6a. Recorded production (3 yrs of 5(?)): 10,179 tons. Estimated total production: 14,000 - 16,000 tons.

Remarks: This mine is known from an inspector's report to have been in existence in Feb. 1900. Further, Baldwin sold his interest in Mine No. 15 in Oct. 1898. This gives good reason to suspect that this mine (No. 50) was started up and in production no later than the spring of 1899. Baldwin is known to have been active in mining in the City area from Feb. 1895 through Feb. 1906, as the operator of no less than four separate mines. There is no plan of Mine No. 50.

This mine is positioned on my plate on the basis of a report by the Mine Inspector in Feb. 1900 (in file, Mine No. 15) that Coit's Mine was 'located about a 1/4-mile west of Baldwin's mine'. It's a short 1/4-mile from Coit's 1900 (S.W.) entry to Baldwin's. An additional factor was the necessity of a 'best fit' between the RL 20/22 boundary and the known workings of the upper No. 632 mine. On these bases and on the production record I have sketched in my estimated area.

The Mine Inspector reported in Nov. 1901 that this was one of the most extensive tunnels in operation in the district. The Annual Return for 1901 listed a 4' X 45' deep airshaft; its location is unknown. In Nov. 1902 the inspector stated that this was the largest producer in the district, and again in Nov. 1904 commented that the workings were the most extensive in the district with an output of 40 tons/day.

The mine changed hands in Aug. 1903 and mining was stopped in July 1904 by lease termination. The Federal Government had purchased RL 20 as a penitentiary site.

This is the extent of information on record. A surprisingly small amount considering the extent and productivity of the mine. It must have been virtually trouble-free.
Refs.: 1; 2.

Mine No. 60 (u/g). Eagle Mine. Location (uncertain): River Lot 25. 1902(?). Seam: probably about 4'. Cover: unknown. No record of production.

Remarks: No mine plan. A letter of 30-i-02 from one of the partners said 'we have started mining in the river mine we have opened'. Nothing else is known of this operation. A letter of 11-i-04 from the same partner said 'I have not mined any for over two years'. A very short-lived mine indeed!

This mine is positioned on the plate as close as was convenient to the old Dowler's Hill Road. Classed as a very small mine.
Ref.: 1.

Mine No. 67 (u/g). Location (uncertain): River Lot 23A. Operator: Gallagher-Hull Meat and Packing Co. Ltd. 1900-1904(?). Seam: 4'. Cover: not known. No record of production.

Remarks: No mine plans. The Edmonton Bulletin reported in Dec. 1900 that the company 'have opened a coal mine on their property on the south side. The seam is 4' thick. The mine is intended chiefly for their own use'. We know from reports in both the Edmonton Bulletin and the South Edmonton News after the flood of 1899, that the packing-house was on the low, easterly end of Bird's (Gallagher's) Flat near the bridge across Dowler's Creek. I have positioned this drift on the outcrop band as close as convenient to Dowler's Creek.

In Nov. 1902 the Mine Inspector reported 'a new mine now being opened up by Gallagher and Hull [the company]. Drift started in side hill is now in 130' in gravel, not having yet struck the coal'. In Jan. 1903 he reported the tunnel completed to the coal

Continued on p. 13.

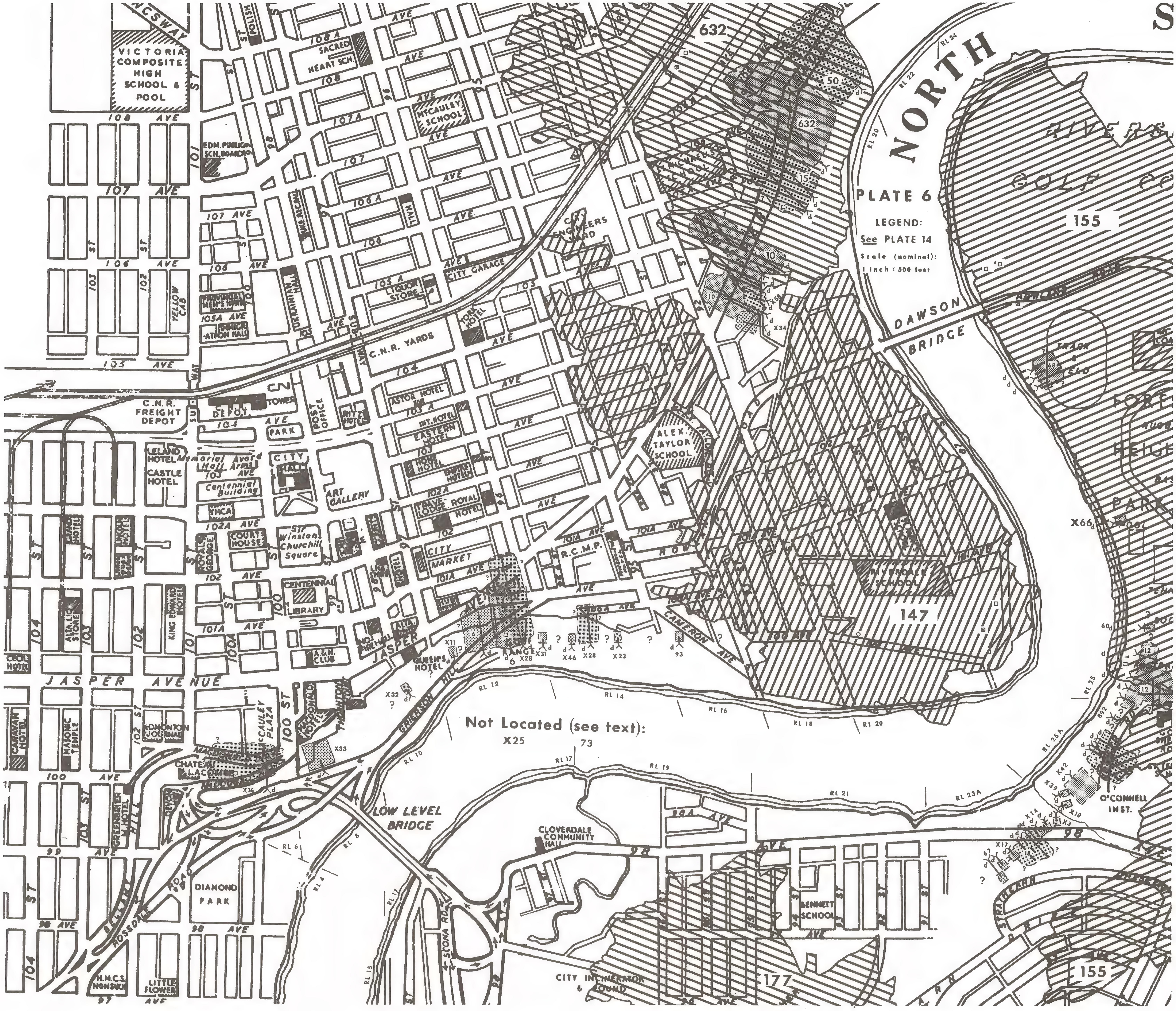


PLATE 6

LEGEND:
See PLATE 14

Scale (nominal):
1 inch : 500 feet

Not Located (see text):
X25 73

Plate 6. Continued from p. 11.

and a small amount mined for the company's own use. I regard this as a second drift run by the company, and have plotted it alongside the 1900 drift. It is apparent from the file that the government had no knowledge of the company's 1900 drift.

There is contradiction in the records as to whether or not this mine operated in 1904. Certainly, it was abandoned in or prior to 1905.

Classed in the aggregate as a very small mine.
Ref.: 1; 2; 3.

Mine No. 68 (u/g). White Light Mine. Location (approximate): River Lot 25. 1902-1905. Seam: 4'. Cover: probably up to 80±'. Estimated area: about 1a. Recorded production (4 yrs of 4): 3,300 tons.

Remarks: No mine plan. This mine is located on the plate on the bases of two items. Firstly, topographic information from a photo in the Brown collection that led me to conclude that this mine was farther downstream than any other mine in the high seam on RL 25. Secondly, three side-by-side drifts mapped in the above general area on the final plan of the Dawson Mine (No. 155).

This mine was reported to be opening up in Nov. 1902. In Jan. 1903 the inspector reported that the mine was 'working two shifts and producing about 15 tons/day. The present opening will not last as soon as spring opens, the face of the hill being on the move'.

Production stopped at the end of Jan. 1903 and started up again in Sept. 1903. The above paragraph implies that a new drift was required, and I assume that this was so.

The mine ceased operations in Oct. 1905, and it is reasonable to assume that a third drift was required in the last two years of operation. Further, the original operators sold out to Dawson and Hyndman, who established the Dawson Mine. This may well account for this mine (No. 68) appearing on the map of the Dawson Mine.
Refs.: 1; 5.

Mine No. 73 (u/g). Location: unknown. Operator: James Martin. 1903.

Remarks: No mine plan. The Mine Inspector reported in Jan. 1903 that 'This is also a new mine being started by James Martin under lease on the Wood property. Work was only commenced about two weeks ago'.

The inspector reported on 22-ii-04 that the mine was not in operation in 1903; that it possibly produced a few tons at the beginning of the year. A similar report of Jan. 1905 stated that the mine was not in operation in 1904. Nothing more is known of its history.

Classed as a prospect.
Ref.: 1.

Mine No. 93 (u/g). Cameron's Mine. Location (uncertain): River Lot 16 (See Remarks). 1904-1906. Seam: 3'. Cover: not known. No record of production.

Remarks: The file on this mine was not located in Mines Division archives. Possibly it is just misplaced; however, it may be missing, for three months of work with these files did not bring this one to light. There is no mine plan.

There is disagreement with respect to the location of this mine: it is reported in various sources to be in both RL 16 and RL 18. I opted for the RL 16 location primarily because the western part of RL 16 – next to the side-scarp of the large slump of 1901-1902 – would be the easiest place to get at the seam. Also, this area appears to have been the least built-up.

This mine was operating prior to Aug. 1904, for on the 17th of that month the Edmonton Bulletin reported that John Cameron presented to City Council a bill for 14 tons of coal at $2.40/ton. The coal was used for testing purposes. This mine was abandoned in June 1906. It is regarded as a very small(?) mine.
Refs.: 1; 2; 8; Cashman, 1958.

Mine No. 147 (u/g). Chinook Mine. Location: River Lots 16, 18, and 20. 1907-1911; 1918-1930. Seam: 5' - 6'6", dipping slightly to S.W. Cover: 60±' - 230±'. Known area: 143a. Recorded production (18 yrs of 18): 678,731 tons (377.07 a.ft.). Estimate average thickness of coal mined at 5 1/2'; indicated recovery is about 47 1/2%.

Remarks: Oldest (United/Ritchie) surface works in S.E.: hoisting shaft 80' deep; airshafts (two): N.E., 67' deep; S., depth ?. The South airshaft was a borehole to the workings, reamed out to a depth of 35' and then abandoned before completion when the mine shut down for several months in 1908.

Chinook (old Edmonton Collieries) surface works: hoisting shaft 95' deep; airshaft, depth ?. The seam was 5' - 6'6" with 6" - 12" of this left for roof support.

Abandonment plan with date of last underground survey 2-iv-30; added information to 14-iv-30 with note "By information from Overman". Also carries note "Mine abandoned 14-iv-30". This surveyor's plan carries the workings of Ritchie (1908-1911) and the Chinook Mine (1918-1930). Someone has added, in blue ink, the workings, including hoisting and air shafts, of the United Collieries (1907-1908).

No survey tie-point is shown, but the plan carries the grid of overlying streets. All these workings are plotted from the S.E. corner of the intersection of 102 Ave. and 92 St.

Discrepancies between base map and reduced mine-plan are significant. In the extreme S.W. the workings reach about 60' too far west on the base map; in the N.W. the workings reach about 40' too far west and nearly 100' too far north. Discrepancies to the east and southeast cannot be determined, for the river boundary as shown on the mine plan is in error.

Originally, the United Collieries started this mine (1907-1908). Ritchie Coal took over in late 1908 and operated the mine until Oct. 1911 when these early workings were abandoned. City (later, Edmonton) Collieries reopened the property in 1918 and sank two shafts about 1000' west of the old surface works. In 1925 Penn Mines took the operation over and ran the mine until final closure in 1930.

These workings were troubled by cave-ins and subsidence throughout their history. Subsidence occurred around the second shaft-head in 1908. Cave-ins occurred in the workings in 1909, 1912-1913, 1920, and 1926-1927. In 1930 the operating company was involved in legal action respecting subsidence affecting some of the houses in Riverdale Flats (letter, 17-iii-30). Subsidence was also held to be involved in a gas-main leak and subsequent explosion in the same year and in the same area (letter, 30-iv-30).

An unsigned plan of the Ritchie operation with a latest date of 2-viii-11 against the underground workings shows two caves to the surface. One is about 540' W.N.W. of the hoisting shaft; the second is about 250' N.E. of the hoisting shaft. In addition, one cave is shown in the workings about 140' S.W. of the same shaft.

In much of my work with mine maps in this study, when I've found differences between the river boundary as presented on mine map and base map, I've tended to assume that the base map was incorrect. This may occasionally be true, but with respect to Plate 6 I'm convinced the opposite is true. After studying the relationships of Mines No. 147, 155, and 632 (deep) to the river on the base map, I can only conclude that the mine surveyors were using different standards for mapping the edge of the river than did the maker of the base map. Respecting Mine No. 147, there is no doubt in my mind but that these workings extend out under the river in at least one area.

According to Beach the Lower Clover Bar seam was worked for a while in this mine but no evidence to support this claim is to be found in the records.
Refs.: 1; 9.

Mine No. 155 (u/g). Dawson Mine. Location: River Lots 23A, 25A, and 25, and an irregular fraction of the N1/2, Sec 34-52-24-W4. 1907-1944. Seam: 3'8" - 6', dip very slight to S.W. Cover: 80±' - 240±. Known area: 191 1/4a. Recorded production (37 yrs of 38: no production 1907): 723,027 tons (401.68 a.ft.). Estimate average thickness of coal mined at 4 1/4'; indicated recovery is about 50%.

Remarks: Hoisting shaft 114' deep; Fan Shaft (old hoisting shaft, west of pair) 93' deep; Airshaft (east of pair) 96' deep; Southern Airshaft (west of Mine No. 12 drifts) 124' deep. The seam generally seems to have been 4 1/2' - 5' thick, with 6" - 12" of this left for a roof.

The final plan has a last date against the underground workings of 6-iv-44; it carries the note "Abandoned April 5th 1944". The survey tie-point is given in a company letter of 28-v-15 as a point on the common RL 25/27 boundary, 3762' N. of their S. boundary post. The plan carries part of the overlying street grid. The workings are plotted on the plate from the N.W. corner of the intersection of 101 Ave. and 84 St.

Discrepancies in departure (east-west) appear insignificant. In latitude, at the north end of the workings the discrepancy between base map and reduced mine-plan may be as much as 150'; in the south it appears to be about 50'.

On the base map the Dawson workings appear to reach under the river along much of their northwestern edge. This may be more apparent than real. On the mine plan, the distance to the river bank from my plot-point (101 Ave. and 84 St.) is 895'; on the base map, only 770'. The National Topographic Sheet 83 H/11d (1:25,000) shows the distance to be about 850'. I doubt very much that the river has done enough erosion since the Dawson mine plan was made to account for these differences. It appears probable that the Dawson workings extend 50±' closer to the river than is shown on the mine plan. The base map I use appears to be even more in error in this instance. See discussion on river boundaries under Remarks, Mine No. 147.

This mine had a number of cave and subsidence problems. These were sufficiently troublesome to show up in the inspectors' reports of 1912, 1914-1916, 1923, and 1929-1932. In July 1915 a squeeze on the mine caused to be lost that portion of the mine south of the shaft pillar. A similar squeeze occurred in the Second West entry in Feb. 1929.

An engineman told me of one cave at the Dawson that broke the surface halfway up the hill east of the bridge in 1929-1930(?). The cave-in hole was in the road, was about 20' deep, and was sufficiently wide to force him to drive partly off the road to get around it. This was at an elevation of about 140' above the workings.

Subsidence and minor caving are still occurring over these workings in the western part of the Riverside Golf Course. The Head Greenskeeper of Riverside recently showed me the 12' X 10' scar in the turf a few feet from the 18th green by the clubhouse, that 'has been filled 5 or 6 times when it gets down about 3', the last time being last fall'. Farther down (north on) the 18th he showed me the area where subsidence is most noticeable. A series of linear swales and low ridges cut transversely across the fairway where level ground was seeded when the course was built. The relief here is about three feet and it looks typical of subsidence over long rooms and pillars. He stated that the relief is noticeably increasing with the passage of time. He also pointed out a number of small pits in the area that, to me, represent minor surface breaks caused by small caves.

The smaller number and smaller size of cave-ins here, as compared with the Highlands Golf Course, (Mine No. 869, Plate 5), I attribute to a slightly thicker rock roof over the seam, here.
Refs.: 1; 9; Long, 1971; Mitchell, 1971.

Mine No. 177. See text with Plate 8.

Mine No. 632 (u/g). Two mines: upper seam, the Penitentiary (Pen) Mine; lower seam, the Penn Mine. Location: Pen Mine, River Lot 20; Penn Mine, River Lots 16, 18, and 20. 1908-1920 (Pen Mine); 1920-1930 (Penn Mine). Seams: upper, 3'6"; lower (the Clover Bar), 3'6" - 6', dipping slightly to S.W. Cover: Pen Mine, up to 90±'; Penn Mine, 60±' - 250±'. Areas: Pen Mine, known 5a, estimated 3 1/2a, total 8 1/2a; Penn Mine, known 100 3/4a. Recorded production: Pen Mine (6 yrs of 13): 15,359 tons, estimated total production, 20,000 - 23,000 tons; Penn Mine (10 yrs of 11: 2 wks production in '20 included with '21): 370,404 tons (205.78 a.ft.). Estimate average thickness of coal mined in Penn Mine at 4 3/4'; indicated recovery is about 42 1/2%.

Remarks: The Pen Mine.

Operated by the Dominion Government in the persons of the Warden and the Chief Trades Instructor. The miners were convicts. Reported to have been operating in 1908, two years after the federal penitentiary opened for business.

The file on this mine is scant. Provincial Mines Inspectors were apparently invited in only in times of trouble in the mine. Although production figures were given to the Province for 1915 and onwards, the first Provincial Mine Inspector's report was filed in July 1917.

The convicts worked this mine through 1919. The operator who was establishing the Penn (deep seam) mine worked this (Pen) mine in 1920.

The airshaft shown on my plate is believed to be the one destroyed by fire in June 1917; it was probably about 90' deep. It is extremely likely, in view of the depth of these workings, that a second airshaft was sunk, but this is not known. These workings were, beyond question, the most extensive upper-seam workings in the Edmonton district. The known depth of the workings is summat over 1000'.

The known workings of this mine are shown on two different maps. First, an unsigned blueprint of 7-iii-17 that carries a note stating that it incorporates information from a survey of 1915. The second map is dated Dec. 1918 and is by an Alberta mine surveyor. This 1918 map shows the two main penitentiary buildings as does the final plan of the underlying Penn Mine. After transferring the data of the 1917 map to the 1918 map, this latter was oriented and positioned by reference to the final plan of the Penn Mine, and the upper-seam workings plotted on the plate (solid line).

Over a quarter of the total estimated production from this mine was got out in 1919 and 1920 after the last survey of record. Very little of the workings from 1908 to 1914 appear to be shown on the 1917 blueprint. The dashed line with which I have extended these workings is based on a reasoned estimate of the total development of the mine.

Coal was conveyed by an incline from immediately downstream of the drift entry, up under Jasper Ave. through a subway, directly to the penitentiary power house.

The Mine Inspector reported in July 1917 that he 'looked into the matter of subsidence of the laundry building reported on 8-iii-17; it is still proceeding'.

This occurrence of subsidence damage to the east main penitentiary building resulted from as great a communication gap as I've ever encountered. The Dominion Government bought this property in 1901 for the avowed purpose of building a penitentiary. The Edmonton Town Council, which recommended the purchase in Dec. 1900, pointed out that the property was partly undermined by coal workings which might endanger the foundations of a large and heavy structure unless due precuations were taken to prevent it.

In Nov. 1901 the Deputy Commissioner of Public Works, N.W.T., wrote to the Secretary of the Department in Ottawa and said that Mines Inspector Smith "states that steps should be taken to see that the mining of coal will not have the effect of endangering the foundations of any buildings which you may put up on that property. This suggestion is made in view of the fact that serious trouble has occurred at Edmonton in connection with the foundations of certain buildings owing to the removal of the coal underneath the property upon which they are situated." - - - ." - so that your Department may have the opportunity of looking into this matter before buildings are erected, and to prevent any possibility of the same trouble which has occurred with other buildings in that locality." (25-xi-01, file, Mine No. 50). (Smith later recommended (Special Report, 23-ii-02; Mine No. 50) a foundation pillar of at least 300' radius about any federal building put up on the site.)

The Secretary forwarded the letter to the Minister of Justice, whose Department had jurisdiction. Apparently, the word filtered part way back down the line, for in July 1904 the Dominion Government terminated the lease of the only operating upper-seam mine in RL 20 (Mine No. 50).

The penitentiary was built, and was in operation in 1906. In 1908, mining was progressing in from the river bank with convict miners. Nine years later the easternmost of the two main penitentiary buildings (with power house, boiler room, laundry room, and work shop) was cracking up from foundation failure. The 1917 blueprint shows two-thirds of this building undermined. It is obvious that the word never got all the way back down and stayed around for the warden. The Pen Mine closed in 1920; the penitentiary closed in 1920.

I can't help but think that the convict-miners, after March 1917, must have been laughing all the way back to their cells, each night.
Refs.: 1; 2; 9; MacGregor, 1967.

Remarks: The Penn Mine.

Hoisting shaft 247' deep; airshaft, depth ?. The final plan carries 27-v-30 as date of last survey. The operator gave 21-v-30 as the date of abandonment. No survey tie-point is given, but the overlying street grid and railways are shown on the plan. The workings are plotted from the intersection of the northern C.N. rail-line with the east boundary of 92 St.

Discrepancies between base map and reduced mine-plan are minor. In the N.W. (near 108A Ave.) the workings reach about 50' too far on the base map. Discrepancies of similar magnitude may occur in the northern and northeastern projections of the workings. Discrepancies in the south and southeast, and especially along the river, are not determined. See discussion of river boundaries under Remarks, Mine No. 147.

In Mar. 1922 a major squeeze caused by pillar robbing closed Nos. 1 and 2 West sections with the loss of much coal. In Nov. 1949 (19 yrs after closure) the operator advised the Mines Division that the washhouse building (near(?) the hoisting shaft) 'is showing evidence of some movement having taken place during the last 12 months'.

Little else of interest is found on this mine in the file. The annual production figures for 1927-1930 are more informative. These show that in the last 4 1/2 months of operation (1930) this mine produced more coal than it had in the previous 2 1/2 years. It seems apparent that many pillars were pulled as the crew retreated out of the mine. This would have had the effect of increasing both the rate and magnitude of eventual surface subsidence.
Ref.: 1.

Mine No. 892 (u/g). Creek Coal Mine. Location (uncertain): River Lot 25A. 1921-1922(?). Seam: probably about 4'. Cover: not known. Recorded production (1 yr of 2(?)): 33 tons.

Remarks: A letter of 22-ii-21 stated that it was intended to 'drive a drift on RL 25A to be called the Creek Coal Mine; coal owner Rbt. Ritchie; lessees and operators as above /Ordge and Thomas/; property is about 2a in westerly corner of river lot'.

I positioned this mine on the map in the northwesterly corner of the river lot. However, from the description and name it is probable that this mine belongs closer to Dowler's Creek, possibly in the immediate vicinity of X39 or X42.

In August 1921 the partnership changed. In June 1922 the Mine Inspector suggested that the mine be considered abandoned. Nothing else is known of this operation.
Ref.: 1.

PLATE 7

Mine No. 12. See text with Plate 6.

Mine No. 148 (u/g). Frank Mine. Location: River Lots 31 and 33. 1907-1915. Seam: 4' - 5', horizontal. Cover: 30±' - 150±'. Known(?) area: 16 1/2a. Recorded production (7 yrs of 9: no reports for '08, '15): 37,185 tons (20.66 a.ft.). Estimate average thickness of coal mined as 4 1/2'; indicated recovery is about 27 1/2%.

Remarks: Hoisting shaft 42' deep; airshaft 45' deep.

Survey plan with last date of 3-iii-15, tied to an iron pin at the N.W. corner of Rose Street and Saskatchewan Avenue. This plan was made for the last (1911-1915) operator, and does not show the older workings N.W., W., and W.S.W. of the hoisting shaft. I did not use this plan for plotting the workings on the plate. Instead, for the most part I used the workings as shown on the final plan of Mine No. 1357, which worked around about 320° of the Frank Mine and mapped many parts of the Frank's workings by contact and by flat boreholes. The dashed line on the N. side of the Frank, I drew as a logical extension of the known workings. Thus, the Frank workings as shown are a composite of the information on the 3-iii-15 plan, on the final plan of Mine No. 1357, and my reasoned estimate of the N. boundary. The plot is tied to the N.W. corner of the intersection of 75th Street and (the old) 106th Avenue as shown on the final plan of Mine No. 1357.

This mine had five different operators during its nine years; this undoubtedly accounts for the very low recovery rate. The percentage of recovery from different parts of the mine undoubtedly varied markedly.

The mine was flooded by the high river levels of 1915 but the precise date is unknown. Official correspondence indicates it may have happened in April, rather than by the extreme high waters of June. The shaft collar was only about 12' above 'normal' high water levels.

In the period 1911-1915 a variety of minor cave-ins were reported in the workings.
Refs.: 1; 8.

Mine No. 155. See text with Plate 6.

Mine No. 1357 (u/g). Red Hot Mine. Location: River Lots 29, 31, and 33. 1931-1951. Seam: 2'6" - 5'. Cover: 30±' - 190±'. Known area: 92 1/2a. Recorded production (21 yrs of 21): 266,350 tons (147.97 a.ft.). Estimate average thickness of coal mined at 3 3/4'; this indicates about 42 1/2% recovery.

Remarks: Eastern slope (oldest) 18 1/4°, map-length 188'; western slope 13 1/2°, map-length 520'. Eastern airshaft 48' deep; southern airshaft 66' deep; western airshaft, depth ?.

Final plan dated 6-iv-51 with note "Abandoned April 5, 1951". Plan in two sections with the western section carrying the overlying street grid. No survey tie-point shown, but a note on the east boundary line of RL 31 indicates that the survey may have been tied to a pin at the southern end of the common RL 31/33 boundary. To plot the mine workings, I used the N.W. corner of the intersection of 75th Street and (the old) 106th Avenue as shown on the final plan's street grid.

The discrepancy between the base map and the reduced mine-plan is significant in the E.-W. direction. In the N.W. corner of the workings on the base map, the workings reach nearly 90' too far west. At the eastern tip of the workings, they reach about 90' too far east. It should be noted here that the river bank as mapped on mine plan and base map is in quite different positions along most of its common length. The workings may reach about 50' too far north, but it is not possible to be sure.

The final plan carries a note on the workings from 100' - 300' S. of the S. centre of the Frank Mine: "Pillars out Sep 11, 1942"; "Crushed". It is apparent that some major subsidence took place within and above the workings during the mine's operation.
Ref.: 1.

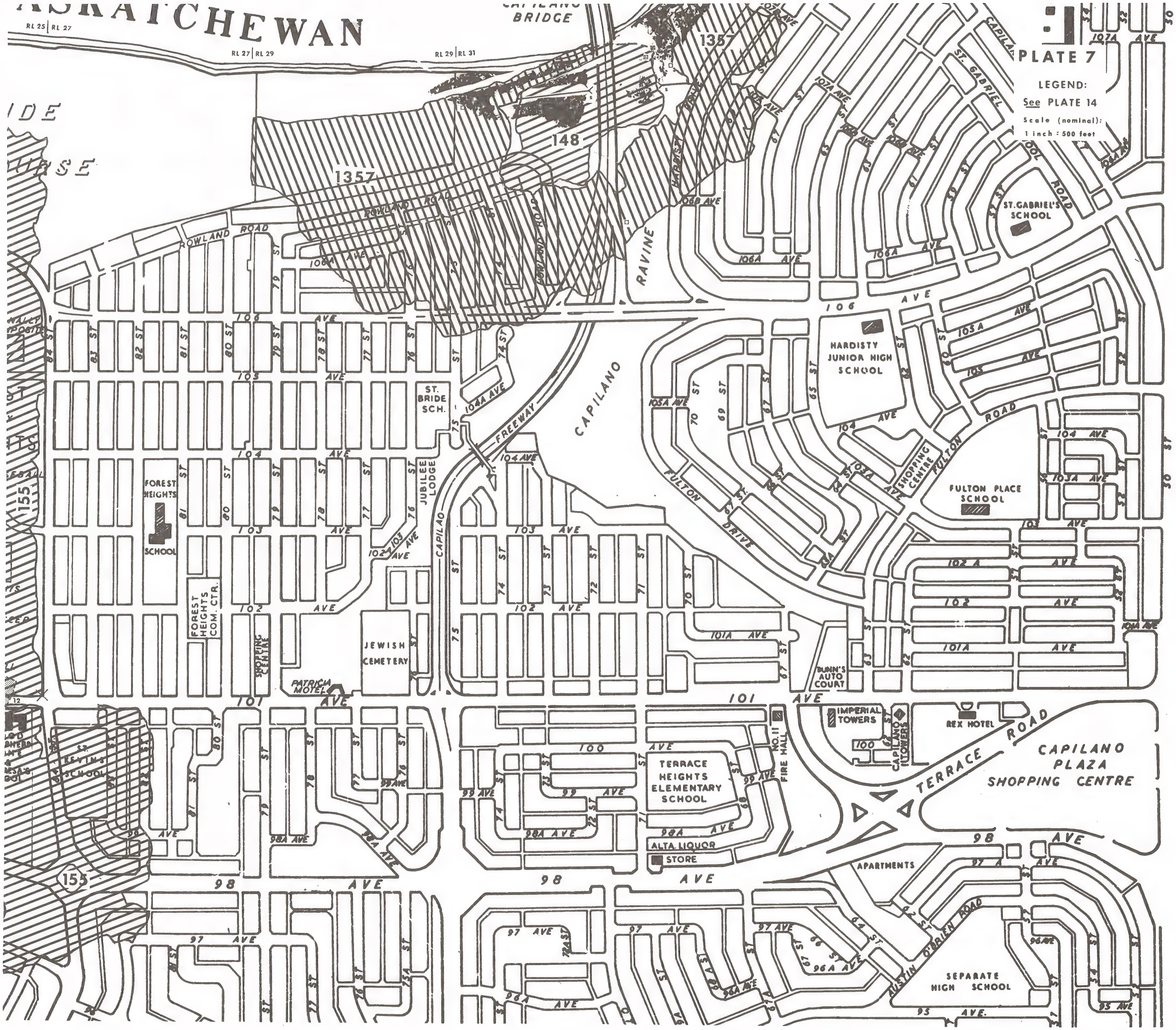


PLATE 7

LEGEND:

See PLATE 14

Scale (nominal): 1 inch : 500 feet

Mine X2 (u/g). Location (approximate): River Lot 15. Operator: Donald Ross. 1880-1883(?). Seam: probably about 4'. Cover: probably up to about 70'. Production of record: 150 tons.

Remarks: The Edmonton Bulletin reported in Jan. 1881 that 'D. Ross will take out for H.B.C. 100 tons of coal for use on the steamer Lily next summer. He commenced delivery at the Fort on 8-i-81'. In July 1882, 50 tons of coal was chute-loaded into a barge from the stockpile at the mouth of the drift, for delivery to Battleford, Saskatchewan.

The earliest (1883) coal analysis found in this study was of a sample taken from the stockpile at this mine, which had been outside for more than a year: water 17.765; ash 4.40; volatiles 28.23; fixed carbon 49.60. Sampler: James Turner, Hamilton, Ontario; analyst, unknown.

This mine was identified in the labels of two photos in the Brown collection. My map location of X2 was picked off these photos.

Classed as a very small mine.
Refs.: 2; 5.

Mine X9 (u/g). Location (approximate): River Lot 15. Operators: Moore and Ross. 1880(?)-1883. Seams: upper, 4'3"; lower, about 2'. Cover: first upper-seam drift, shallow; second upper-seam drift, probably up to about 60'; lower-seam drift, probably about 60' - 70'. Production of record (season of 1882-1883): about 200 tons.

Remarks: The Edmonton Bulletin reported in Jan. 1882 that 'On the south side Moore and Ross opened two drifts last winter, with 6-man gangs. Both upper and lower seams were worked. The lower seam dips below river level; it has the best coal. Most production came from the upper seam. The firm attempted to get a patent on the coal but were refused although one of the firm has squatter's claim to the ground'. The coal claim referred to is undoubtedly that one shown on RL 17 on Deane's 1882 map of the Edmonton Settlement. According to Beach, the applications for coal patents were refused on the grounds that they were too near the town. It's a pity that this attitude wasn't more prevalent, and didn't persist for the next 60 or 70 years.

In or before Jan. 1883 the firm opened a new drift in the upper seam, about 100 yards upstream of their previous upper-seam drift. Here, the 'depth of cover was much greater. The seam is 51" with a 12" parting, and about 50' above river level. Breast mining is done, carrying 15° breasts along each side parallel to the main drift. The firm plans to abandon the drift at the end of the season'.

This mine is positioned on my map by description and topography, and by information from a photo in the Brown collection. This photo shows Ross' X2 mine and in the background what I believe to be the surface workings of X9's last (upstream) drift. The correspondence in X9's position as derived from topography and description, and from the photo, are so close that I am certain of this identification.

I should note here that the Ross of Moore and Ross apparently was not Donald Ross nor his brother Alex. I believe it was probably W. Ross.
Refs.: 2; 5; 9; Ross, 1971.

Mine X15 (u/g). Location (uncertain): River Lot 15. Operator: Alex. Ross.

The Edmonton Bulletin reported in Nov. 1883 that the operator 'opened a drift in the lower coal seam on the south side, opposite town. This seam is not so thick as the one usually worked'. This was probably the lower of the two seams mined by X9.

X15 is positioned near X2, because Alex. may well have used some of the facilities already established at X2 by his brother, Donald.

Classed as a very small mine.
Ref.: 2.

Mine X22 (u/g). Location (uncertain): River Lot 15. Operators: Sache and Walter.

The Edmonton Bulletin reported in Nov. 1886 that 'F. Sache has opened a coal drift on his claim on the south side'. In Nov. 1887 the paper said that 'Sache and Walter have established a wire-rope ferry from their drift on the south side to Ross' flat. The coal is shot into the scow from the mine and loaded into wagons on this side'.

However, in Dec. 1887 the Bulletin reported that 'Sache and Walter commenced mining on the former's claim, south side, only about four feet above the level of the river. The seam is 3' thick, hard, bright, and very good'.

It appears that the operators had drifts in two seams, probably the same seams that X9 mined. The thickness of the upper seam (probably about 50' above river level) at X22 is not known. The seam described above is the lower seam.

The upper-seam drift is positioned on the plate so that a deep-laden ferry-scow would have a minimum of shoal water at low river levels. The lower seam drift is placed nearby for convenience.
Ref.: 2.

Mine X29 (u/g). North Star Coal Mine (See also X56/4/5, Plate 6). Location (uncertain): River Lot 15. 1892-1898. Seam: 4'. Cover: probably shallow, less than 30'. Production unknown.

Remarks: The Edmonton Bulletin reported in Oct. 1892 that 'N. Luse has opened a mine on the Sache estate [RL 15], South Edmonton'. Later in the year the Bulletin said 'The C. & E. railway terminates immediately over one coal drift and there are six others immediately opposite on the north side of the river'.

In Nov. 1894, Luse again was reported to have opened a coal drift on Sache's property. Shortly thereafter the South Edmonton News reported that the mine had changed hands, E. D. Martin being the purchaser. In Nov. 1895 the South Edmonton News reported that Martin 'had opened up a coal mine on the Sache property just below Ritchie's flour [Northwest Feed] mill. He says he has struck a seam 4' thick of good quality'.

Both the rail terminus and the Northwest Feed mill are in the centre of RL 13, not RL 15. X29 is positioned at the RL 13/15 boundary because of the descriptive material above.

Apparently, X29 consisted of at least three drifts. Classed, in the aggregate, as a small(?) mine.
Refs.: 2; 3.

Mine X53 (u/g). I.X.L. Mine. Location (uncertain): River Lot 13(?). 1894-1895. Seam: probably about 4'. Cover: probably shallow.

Remarks: The South Edmonton News in Dec. 1894 carried an advertisement stating 'New coal mine below the grist mill. I.X.L. mine will deliver at $1.75/ton'. The reference to the grist mill is taken as meaning Ritchie's flour mill - our Northwest Feed mill. While the same terminology - 'below the mill' - was used in the original descriptions of the locations of several of the other mines on this plate, these latter were also stated to be on Sache's property - RL 15. No reference to Sache's property was found in connection with this (X53) mine, however, so it is placed directly below the mill. It may well be, though, that this mine belongs with the group on the upstream end of RL 15.

Classed as a very small mine.
Ref.: 3.

Mine X55/25 (u/g)(on Plate as No. 25). Taylor and Carscadden Mine. Location (uncertain): River Lot 15. 1897-1899. Seam: 2' - 4±'. Cover; area; production: all unknown.

Remarks: The Alberta Plaindealer reported in Oct. 1897 that 'Taylor and Carscadden are opening a coal mine near the one used by E. D. Martin [X29] last winter'.

In Feb. 1898 the Mine Inspector reported that the coal was running down very thin. In Feb. 1899 the inspector stated that the depth of the main tunnel was 200', the side drift 240', and the coal two feet thick.

There is no mine plan; the sketch on the plate is an approximation only. I do not know whether the side drift was to the right or left. The mine was positioned to be near Martin's X29.

Classed as a very small mine.
Refs.: 1; 3.

Mine X65 (u/g). Location (uncertain): River Lot 15. Operator: W. Storey.

In Feb. 1890 the Edmonton Bulletin reported that 'On the south side coal is being mined on F. H. Sache's claim by W. Storey'.

Nothing else is known of this operation; I assume it to have been a one-season affair. Classed as a very small mine.
Ref.: 2.

Mine No. 25. See Mine X55/25.

Mine No. 177 (u/g). Twin City Mine (See also Nos. 1352 and 1641, Rabbit Hill District). Location: River Lots 17, 19, and 21. 1908-1921. Seams (two): upper, 2'3"; lower (Clover Bar), 4'2" - 8'. Cover: upper-seam workings, 50±' - 130±'; lower-seam workings, 120±' - 260±'. Known areas: upper workings, 2 1/2a; lower workings, 114a. Recorded production (13 yrs of 14: no report, 1909): 506,586 tons (281.44 a.ft.). Estimate average thickness of coal mined at 4 1/4'; indicated recovery is about 57 1/2%.

Remarks: Hoisting shaft 167' deep; airshaft 186' deep. Upper seam landing 81' down. Internal incline connecting upper and lower workings.

The last production for sale was on 31-iii-21; the mine was formally abandoned on 21-v-21. The final plan is dated 6-viii-21, and shows only the lower-seam workings. The survey tie-point is labelled N.W. corner, S.W. 1/4, Sec 34-52-24-W4 and is shown on the grid of overlying streets as the S.W. corner of the intersection of 95th Ave. and 91st St. The workings are plotted on my map from the N.E. corner, intersection of 95th Ave. and 95th St.

The upper-seam workings are plotted from a linen plan (1" = 100') found in the map collection of the City's Engineering Department. As well as the outline of the workings this plan shows the hoisting shaft and several of the overlying streets. These workings are plotted from the hoisting shaft, with the plan oriented on 93rd Ave.

The discrepancy between base map and reduced mine-plan, respecting the lower-seam workings, is significant in both latitude and departure. In both the north and east, the workings reach about 100' too far on the base map. I do not believe there is any significant discrepancy between base map and reduced mine-plan, respecting the upper-seam workings.

Lower seam data on the final plan give a range of coal thicknesses from 4'2" with 4" of bone in the N.E. to 8' with only 2'10" of good coal in the extreme south. In general, this mine seems to have worked 4' - 4'6" of coal in the main body of the workings. The upper seam was worked intermittently from 1909 into 1914. According to Beach, the Lower Clover Bar seam was worked in this mine for a short while, but no evidence to support this claim was found in any of the records.

During shaft sinking in Aug. 1908, the Mine Inspector reported that the shaft took a slight squeeze at a depth of 20' because of a slight sliding in the bank near the shaft. A similar squeeze on the shaft occurred in 1911. Minor caving occurred in the lower workings in 1910, 1915, and 1918. The caving in 1915 was related to an explosion of methane.

A retired steam engineer who worked at this mine has told me of seeing cave voids that reached 25' - 30' above the roof of the seam, in the lower workings.

Longwall mining was tried in both workings. In the upper seam a longwall was operating in Feb. 1914. However, there is no mention of the upper-seam workings in the Mine Inspector's reports of April 1914 or later, so that it's likely the use of the longwall system here was of short duration.

In the lower workings a 200' longwall was in operation in June 1913. The final plan shows five longwall panels; the largest of these is 240' X 150'. It is not known if this was the total extent of longwall mining in No. 177.
Refs.: 1; 4; 9; Long, 1971.

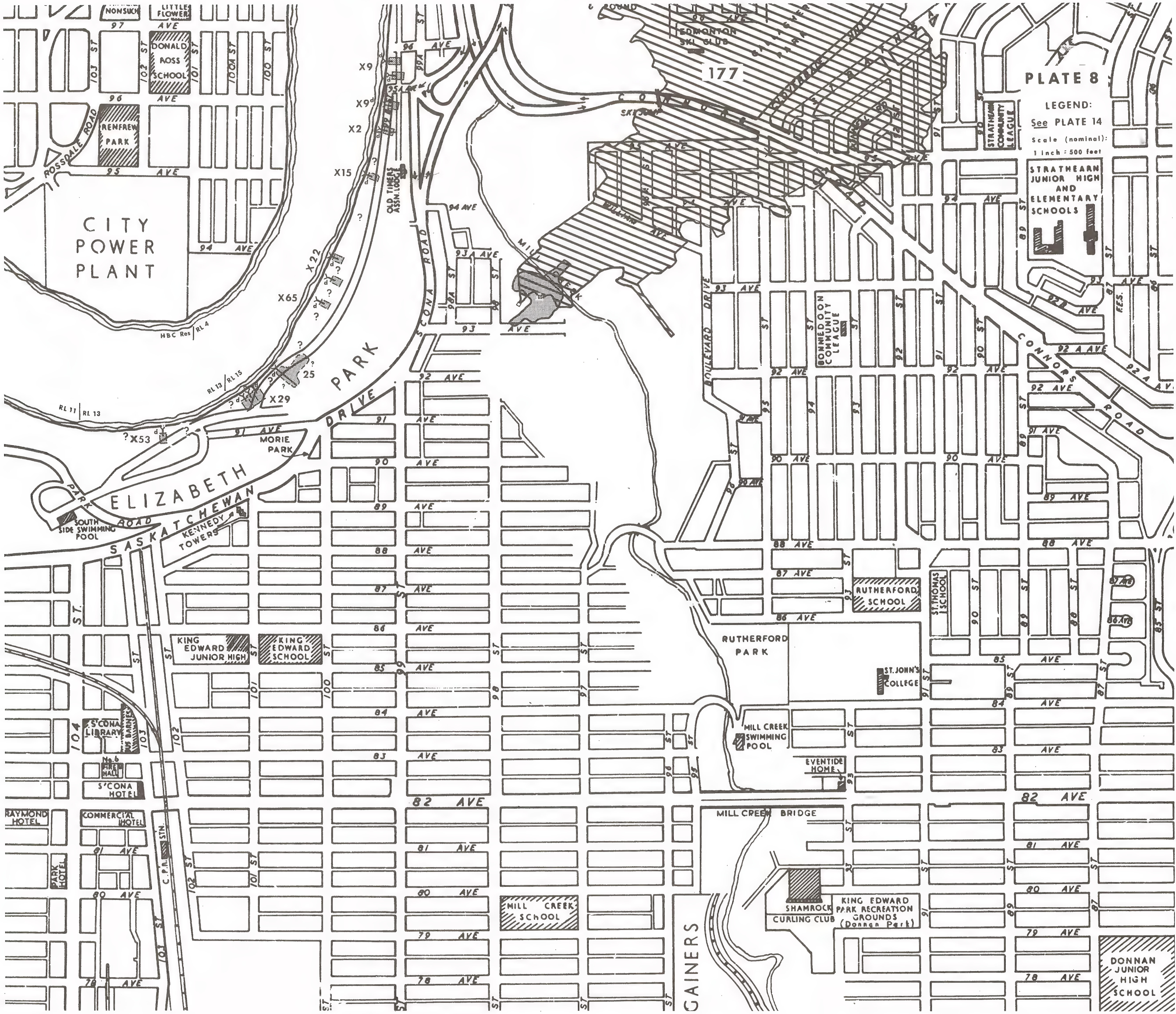


PLATE 8
LEGEND:
See PLATE 14
Scale (nominal):
1 inch : 500 feet
STRATHEARN JUNIOR HIGH AND ELEMENTARY SCHOOLS
STRATHEARN COMMUNITY LEAGUE
NONSUCH
LITTLE FLOWER
DONALD ROSS SCHOOL
RENFREW PARK
ROSSDALE ROAD
CITY POWER PLANT
HBC Res / RL 4
RL 13 / RL 15
RL 11 / RL 13
X9
X9
X2
X15
X22
X65
25
X29
X53
OLD TIMERS ASSN. LODGE
EDMONTON SKI CLUB
SKI JUMP
177
CONNORS ROAD
SCONA ROAD
94 AVE
93 A AVE
93 AVE
MILL CREEK
BOULEVARD DRIVE
BONNIE DOON COMMUNITY LEAGUE
SASKATCHEWAN DRIVE
PARK
ELIZABETH
PARK ROAD
MORIE PARK
SOUTH SIDE SWIMMING POOL
KENNEDY TOWERS
KING EDWARD JUNIOR HIGH
KING EDWARD SCHOOL
S'CONA LIBRARY
BUS BARNS
No. 6 FIRE HALL
S'CONA HOTEL
RAYMOND HOTEL
COMMERCIAL HOTEL
PARK HOTEL
C.P.R. STN.
MILL CREEK SCHOOL
GAINERS
RUTHERFORD PARK
RUTHERFORD SCHOOL
ST. THOMAS SCHOOL
ST. JOHN'S COLLEGE
MILL CREEK SWIMMING POOL
EVENTIDE HOME
MILL CREEK BRIDGE
82 AVE
SHAMROCK CURLING CLUB
KING EDWARD PARK RECREATION GROUNDS (Donnan Park)
DONNAN JUNIOR HIGH SCHOOL
RES.

PLATE 9

Mine X12(u/g). Location(unknown): believed to be in/near the S.E. corner of the NW1/4, Sec 7-53-23-W4. Operator: C. Stewart.

In 1882 Stewart employed W. Humberstone to open the seam on his property. A drift was run, and the seam was found to be burned out.

The Stewart farm, so near as I could tell from a Land Titles' search, lay in the N1/2, Sec 7, W. of the river. This drift was probably in the vicinity of the 'Old Workings' shown in the east side of Mine No. 43. See Mine X40.

Classed as a prospect.
Ref.: 2.

Mine X38(u/g). Location: unknown. Operator: W. J. Graham.

The Edmonton Bulletin reported in Mar. 1894 that the operator had 'recently opened a new coal drift on a seam about three miles down the river from town. Coal of very superior quality; seam 5' thick. Partly below river level; workable in winter time'.

This sounds very much like the Clover Bar seam in River Lot 40, or across the river from there. Nothing further is known of this mine. See also X31, Plate 6.

Classed as a very small mine.
Ref.: 2.

Mine X40(u/g). Location(uncertain): believed to be in west centre, NE1/4, Sec 7-53-23-W4. Operators: unknown.

The Edmonton Bulletin stated in Jan. 1895 that 'a seam of excellent coal is being mined on C. Stewart's farm on the north side of the river opposite Clover Bar'.

It is probable that these workings were opened up years before 1894, and that mining continued here at least until Wm. Humberstone bought the property in 1899. These workings are most probably the 'Old Workings' shown in the east side of Mine No. 43. See Mine X12.

Classed as a small mine.
Refs.: 2; 3.

Mine X41(u/g). Location: unknown. Operator: Alex. Macdonald.

The Edmonton Bulletin in Feb. 1895 stated that the operator had 'opened a coal mine about three miles down the river, the coal from which is considerably harder than that mined in town'. See comments under Mine X38.

Nothing else is known of this operation. Classed as a very small mine.
Ref.: 2.

Mine X44(u/g). Location: unknown. Operator: P. Linklater.

The Edmonton Bulletin reported in Dec. 1895 that the operator 'had opened a new mine three miles down the river. The coal is in large pieces and of excellent quality'. See comments under Mine X38.

Nothing else is known of this operation. Classed as a very small mine
Ref.: 2.

Mine No. 9/14/79(u/g)(on Plate as No. 9). Clover Bar Mine. Location lsd's 2-4, Sec 18-53-23-W4, and lsd 15, Sec 7-53-23-W4 (See Remarks). 1897-1923. Seam: 6'6" - 9'. Cover: up to 150±'. Known area: 65 3/4a (two areas). Recorded production (23 years of 27): 357,027 tons (198.35 a.ft.). Estimate average thickness of coal mined at 6 1/4'; this indicates about 47 1/2% recovery.

Remarks: Hoisting shaft (south), depth ?; fire-caved in 1909. Hoisting shaft (north), 85' deep. Airshafts (two): east (manway) 38' deep; west, 95' deep. Prospect shaft to 5 1/2' Lower Clover Bar seam in 1915: location unknown, depth 135'. Reported to have operated also in the W1/2, lsd 1, Sec 18, but the workings as mapped to not extend into lsd 1. See also Mine No. 66.

It is no longer possible to determine where the original workings of Nos. 9, 14, and 79 were located. These mines were consolidated into No. 9 before 1905. On the oldest blueprint in the records (dated 1-viii-17), dates within the mapped workings are carried back only to 1909.

The final plan of No. 9 (last date of survey 8-i-23) covers the workings within Sec 18 only. Only two drifts are shown on this plan but the oldest blueprint (1917) shows four, while the records indicate that by 1906 there were at least nine drifts into the Sec 18 workings. The survey tie-point of the final plan is the S.W. corner of Sec 18 and this was used to plot the workings. There is no significant discrepancy between base map and reduced mine-plan.

The area of No. 9 in Sec 7 is partly outlined, with two drifts shown, on pre-1922 blueprints in the records of Mine No. 43 where this area is labelled 'Edmonton Coal Company. Abandoned 1909'. There is no evidence of these workings, nor plan of this area, within the records of No. 9. It is likely that there were more than two drifts into these workings.

In 1907 the Mine Inspector reported that there had been fire in /part of/ the seam for years. In 1909 a surface fire - not related to the seam fire - destroyed the surface plant and resulted in the first (southern) hoisting shaft caving shut.

The seam had a gravel roof in places, and a washout formed much of the north boundary of the workings.

In 1915 two entries were driven along a fault back of the ladder shaft (manway) about 500' from the hoisting shaft. Nothing is known of the length or displacement of this fault, which is not shown on the mine plan.
Refs.: 1; 9.

Mine No. 11. See text with Plate 10.

Mine No. 14. See Mine No. 9/14/79.

Mine No. 20(u/g). Location(uncertain): River Lot 36. Operators: Elliott and Louisberg. Drift mine in 3' 6" seam opened in Dec. 1897 and abandoned on 22-ii-98. No plan; no recorded production. In the Mine Inspector's report of 29-i-98 this mine (his no. 7) adjoined his no. 6 (Mine No. 21).

Classed as a very small mine.
Ref.: 1.

Mine No. 21(u/g). Christie Mine. Location(uncertain): River Lot 36. 1897-1898; 1901-1904(?). Seam: 3' 6". Cover: up to 50±'. Area: unknown. Recorded production (Christie Mine: 1 season of 4): 135 tons.

Remarks: In 1903 the main workings were 200' in the bank. There was only one drift at that time and there was no airshaft.

In Jan. 1903 J. Milner leased part of the ground from George Hutton (owner/operator of the main workings) and opened a drift alongside Hutton's workings.

The Christie Mine may actually have operated continuously from 1897-1904, and perhaps even later. It was lost track of in the records, when these records were mistakenly consolidated with those of mines nos. 14 and 79.

There is no plan of the Christie Mine, which is classed as a small mine. The Milner workings are regarded as a one-season effort, and are classed as a very small mine.
Ref.: 1.

Mine No. 23(u/g). Trimble Mine. Location (uncertain): River Lot 36. 1897-1898(?). Seam: 3'6". Cover: probably less than 50'. Area unknown; no recorded production.

Remarks: In the Mine Inspector's report of 29-i-98, this mine (his no. 5) adjoins his no. 6 (Mine No. 21). On 2-ii-98 the main tunnel length was 50'; output was 40 tons/month. It was reported that 'the whole strata is a slide of the river embankment'.

An advertisement in the Edmonton Bulletin on 28-xi-98 indicates that this mine operated for more than the 1897-1898 season. The mine may actually have operated through 1902 (See Mine X63, Plate 11), for it was lost track of in the government's records. In 1901 it was mistakenly reported to be the same as Mine No. 7 (Plate 10), and closed into the records of that mine. Mine No. 7, in turn, was erroneously closed into Mine No. 4 (Plate 6).

Classed as a very small mine.
Refs.: 1; 2.

Mine No. 43(u/g). Humberstone (Raith) Mine. Location: north half, Sec 7-53-23-W4, west of river, and part of River Lot 40. 1899-1925; 1928-1934. Seam: 5' - 7'6". Cover: up to 130±. Known area: 193 3/4a. Recorded production (33 yrs of 34): 980,837 tons (544.91 a.ft.). Estimate average thickness of mined coal at 6'; this indicates about 47 1/2% recovery.

Remarks: Hoisting shaft 107' deep. Airshafts (four): near hoisting shaft, depth ?; N.E., 18' deep; east centre, 36' deep; S.E., 35' deep. In Dec. 1909 a slope was being put down at 1:3 to connect with the new shaft workings. In April 1910 the slope was reported caved in and abandoned; its location is unknown. The 6' X 4' airshaft near the hoisting shaft was then put down; its depth was probably about 110'. In 1919 this airshaft, which is not even shown on the final plan, was apparently not in use, for ventilation was by way of the hoisting shaft and a double-entry connection with Mine No. 46 to the south. Twelve drifts into the outcrop band are known; there were probably more.

An abandonment plan dated 27-iii-25(the date operations ceased)covers the main workings. Two smaller abandonment plans show the workings of two separate salvage operations conducted around the northern and southern airshafts on the eastern edge of the workings. No survey tie-point is given on the main abandonment plan. I used the N.W. corner of Sec 7 from which to plot the workings. The two sets of salvage workings are tied to adjacent mapped entries of the older No. 43 workings.

The discrepancy between base map and reduced mine-plan is significant. The workings of No. 43 reach from 150' (S.W.) to 170' (S.E.) too far south, and apparently, 70' too far east in the S.E. corner, on the base map(See the solid line under the pattern of No. 46 to the south).However, a quarter of the foregoing north-south discrepancy is attributable to the mine map. On it, the western boundary of the quarter-section is 2674' long, whereas the Township Survey Plan shows the quarter-section boundary to be only 2640' long. The pattern of No. 43 was cut off at the common east-west quarter-section boundary with the workings of No. 46, except in the small residual gap in the S.E. corner.

In 1901 it was reported that the seam had been on fire in places for a number of years. A letter of 24-ii-04 in the files of Mine No. 51 stated that the coal in the Humberstone mine adjoining the road allowance (in the N.E.) was on fire. A special report by a Mine Inspector in Mar. 1904 stated that 'at present there is no appearance of living fire on the river bank at the road allowance but there is strong evidence of recent fire, and about two years ago I saw fire present in that vicinity'. In 1914 the outcrop was on fire near the main entry to the drift mine. Fire was reported in the seam at various places, generally underground, and at various times up through 1929. One large fire area shown on the final plan is also shown on my map. It would not be surprising if fire still smouldered in some part of the waste in these workings.

In 1915 water broke into the shaft mine and flooded it. This was apparently caused by pillar-pulling which resulted in caving to the surface, and which allowed surface runoff into the mine. Similar caving to the surface occurred in 1917.
Refs.: 1; 2.

Mine No. 46(u/g). Old Bush Mine. Location: River Lot 42 and part of River Lot 40. 1905-1925. Seam: No. 1 workings, 5'6" - 6'; No. 2 workings, 3' - 7'6". Cover: No. 1, up to 100±'; No. 2, from about 25' to 130±'. Areas: No. 1 (estimated) 17 1/2a; No. 2 (known) 83 3/4a. Recorded production: No. 1 workings (7 yrs of 9), 40,848 tons; No. 2, (12 yrs of 12), 486,663 tons (270.37 a.ft.). No. 1 workings estimated total production is 44,000 tons (24.4 a.ft.). Estimate average thickness of coal mined at 5 1/2'; indicated reocvery is about 25%. No. 2 workings: average thickness of coal mined estimated at 5 3/4'; this indicates about 55% recovery.

Remarks: No. 1 workings: hoisting shaft 45' deep; airshaft 36' deep. No. 2 workings: slope 10°, map-length 130'. Airshafts (two): North, 45' deep; South, 50' deep. Double-entry ventilation connection to Mine No. 43 to the north.

There is no plan of the underground workings of No. 1. There is a final plan of the No. 2 workings (operating period 1914-1925) dated 15-iv-25; mining ceased on 27-iii-25. The survey tie-point for this plan is the quarter-section pin in the east centre of Sec 12-53-24-W4. I used this point to plot these workings. These workings also delimit a good part of the workings of No. 1. The discrepancy, if any, between the base map and the reduced mine-plan of the No. 2 workings is not known. With the workings plotted from their N.W. corner there is no boundary against which to check for any discrepancy. The street grid shown on my map did not exist at the time these workings were in operation.

Respecting the No. 1 workings, however, there is a June 1914 blueprint of a surface plan which ties the two shafts of No. 1 to the slope then being put down for the No. 2 workings. This blueprint also gives very rough limits to the No. 1 workings. (See Remarks, Mine No. 51, in this connection.) The No. 1 workings are plotted from the slope of No. 2, as shown on the 1914 blueprint.

There were six different operators of the No. 1 workings during its 1905-1914 operating period, and to this is attributed the very low recovery rate. The amount of recovery undoubtedly differed greatly in different parts of these workings.

Fire was discovered about 700' west of the head of the slope of No. 2 in Mar. 1922 and it was sealed off. In Dec. 1923 the fire broke through at the Main Slope, and, apparently, was again sealed off. One small area of the fire is shown on my map; it is probable that the actual fire area was much more extensive eastward.

In the extreme south of the No. 2 workings gravel was encountered; it is not known whether this was a washout or gravel on the coal. Just to the west of this the coal was mapped as 3' thick. There is also a note in this southern area on the final plan: "Faulted coal".

In the extreme N.W. there is a small area where Mine No. 707 worked into the edge of these workings.

In 1915 there was considerable water in the workings of No. 2. This was caused in part, at least, by the caving of the old No. 1 workings to the surface which allowed water into the mine. In opening up No. 2, old workings were struck for a ways before solid coal was reached. In 1923 there was a flood of water in the pillar workings of No. 2. This probably resulted from a cave-in tapping water-saturated glacial debris, or breaking the surface and giving entry to surface runoff.
Refs.: 1; 2.

Mine No. 51/123(u/g)(on Plate as No. 51). Bush's Mine. Location (approximate): River Lot 42. 1901-1907. Seam: 6'. Cover: probably up to about 70'. Estimated area: 8 1/4a. Recorded production (4 yrs of 7): 13,957 tons. Estimated total production: 21,000 tons (11.7 a.ft.). Estimate average thickness of coal mined at 5 1/2'; this indicates a recovery of about 25%.

Remarks: Drift mine with three, and perhaps four, drifts. Airshaft 38' deep. This airshaft was located on the 1914 blueprint of the surface plan of Mine No. 46. It is marked on this blueprint about 450' S.E. of the hoisting shaft of the No. 1 workings of No. 46 in white wax pencil and labelled "Old Shaft". The only old shaft known to be in this area is the airshaft of this (No. 51) mine. I have seen on other blueprints in Mines Division archives similar added notations in white wax pencil and believe, but do not know, that these emendations were made by some past Inspector of Mines. On this assumption Mine No. 51 is mapped with the hoisting shaft of the No. 1 workings of Mine 46 as the tie-point. A pencilled plan at 1" = 50' of April 1902 in the files of No. 51 shows the airshaft in relation to the workings of that date, with their single entry.

The other three drifts shown are speculative as to location. The east edge of the workings is a reasoned estimate based on the outcrop pattern both up- and down-stream, and the position of the 1902 workings.

The area enclosed by my dashed eastern edge, and the boundary of Mine No. 46's No. 1 workings totals 25 3/4a. This area was divided proportional to the estimated total tonnages produced by Mine No. 51 and by the No. 1 workings of Mine No. 46, with the tonnage estimates based on production-of-record.

This mine had either six or seven operators in its seven-year span and this undoubtedly accounts for the low recovery rate. The percentage of recovery probably differed greatly in different parts of the workings.

In 1904 pillar extraction caused caving that reached the surface on the slope of the river valley-wall.

The mine number, 123, was assigned to a salvage operation which, during the winter of 1906-1907, extracted 150' of No. 51's main-entry pillar. This number was later consolidated into the records of No. 51.
Ref.: 1.

Mine No. 52(u/g). Location: unknown, but on the N1/2, Sec 7-53-23-W4, west of the river. Operator: F. H. Barnes.

Apparently this work started in Nov. 1901, but in late Jan. 1902 the operator reported that he 'found the seam so small that there was nothing in it', and that he had 'done no mining this winter'. Obviously, he did not strike the Clover Bar seam.

Classed as a prospect.
Refs.: 1; 8.

Mine No. 66(u/g). Location: unknown, but possibly on River Lot 42. Operators: Bishopric and Grierson.

It was reported in Nov. 1902 that the 'property to be opened at once by Bishopric and Grierson is adjoining Mine No. 51'. In Jan. 1903 it was reported that the 'mine again is closed down on account of water. The operators are now formed into a company termed the Edmonton Coal Co.'. Conceivably, this could be the workings of that company south of the road allowance between Secs 7 and 18 (Mine No. 9), which is not identified as to location within the files of that mine. If this is correct, this mine (No. 66) should be consolidated with Mine No. 9/14/79. For the present, however, this operation is regarded only as a prospect(?).
Ref.: 1.

Mine No. 79. See Mine No. 9/14/79.

Mine No. 123. See Mine No. 51/123.

Mine No. 125(u/g). Ketchum Mine. Location: S.E. corner, NW1/4, Sec 7-53-23-W4. 1907-1910. Seam: 7'. Cover: about 40' to 70'. Estimated area: 3 1/2a. Recorded production (3 yrs of 4): 10,400 tons. Estimate total production at 12,600 tons (7.0 a.ft.), and estimate thickness of mined coal at 5 1/2'; this indicates about 37 1/2% recovery.

Remarks: Slope about 11°, map-length 130'; airshaft 60' deep; hoisting shaft 60' deep.

There is a very poor, nearly illegible blueprint on the map-roll of Mine No. 125. There is far more information on this mine, however, on Cautley's 1917 blueprint of Mine No. 43. It is from that No. 43 blueprint that I plotted this (No. 125) mine. As a result, this mine as plotted is subject to the same discrepancy between base map and reduced mine-plan as is the S.E. corner of Mine No. 43 (which see). That is, Mine No. 125 appears about 170' too far south and about 70' too far east, on the base map.

The dashed part of this mine's boundary is my reasoned estimate based on the outcrop pattern and that part of the border mapped by contact with Mine No. 43's workings.

An interesting sidelight on government record-keeping comes to light, here. The operator, W. H. Ketchum, had a company stamp made up extolling the "Ketchum Koal Kompany". In the records (except for Ketchum's few letters) it is the 'K.C.C.', of course, not the 'K.K.K.'.
Ref.: 1.

Mine No. 707(u/g). Bush(Davidson)Mine. Location: River Lots 38 and 40. 1917-1944. Seam: 3' - 5' 6". Cover: up to 175±'. Known area: 144 1/4a. Recorded production (27 yrs of 28; no production, 1919): 705,246 tons (391.80 a.ft.). Estimate average thickness of coal mined at 4 3/4'; this indicates about 57 1/2% recovery.

Remarks: Opened in Oct. 1917 as a single-entry drift mine in a 5' seam at river bank. The operator's letter of 27-xi-17 indicates an airshaft was completed. Operated for four months, produced 1365 tons, and shut down. Reopened in the fall of 1920, and in Feb. 1921 the Mine Inspector reported that there were 'seven drifts about 80' apart into the bank of the river 20 to 80 feet'. Only one drift is shown on the available maps of this mine.

In April 1921 the Mine Inspector found 'a new shaft sunk between 60' and 70', about 4' square inside the timbers. The old shaft is about 100' east of the new shaft'. This 'old shaft' (depth unknown) is the airshaft shown about 180' in the Main Adit (Plate 11) and is, I believe, the airshaft of the original drift mine. The second airshaft, which I have mapped about 100' west of this (and which is not on the final plan), I take to be the 'new' 4' X 4', 1921 shaft referred to above.

Considerable coal was produced from the main drift mine in 1921. In the 1921-1922 season a small, separate drift mine was operated on this property by a lessee for at least four months; its location is unknown.

In 1923 the 160' hoisting shaft was sunk and a manway driven from the river bank through the old drift workings.

The final plan carries the note "Abandoned March 31st 1944". The survey tie-point appears to be the S.W. corner of Sec 18-53-23-W4 where four pits are shown. North of the splice in Plate 9, I plotted the mine workings from the S.W. corner of the intersection of 118th Avenue and 38th Street as shown on the grid of overlying streets on the final plan. South of the splice I plotted the workings from the S.W. corner of the intersection of 106th Avenue and 36th Street. Correspondence between base map and reduced mine-plan is good; there is no significant discrepancy.

As shown, the workings of No. 707 penetrated into a corner of the workings of Mine No. 46. In the northwestern part of 707's workings the boundary as shown on the final plan was corrected in part on the final plan of Mine No. 1366 as this latter mined along 707's workings. The boundary of No. 707 in this northwestern part, as shown on the two final plans(No. 707's and No. 1366's)differed in position by as much as 40'.

In 1938, 100' and 200' longwall faces were operating. It is not known when the longwall system was introduced, nor when(or if)it was discontinued.
Ref.: 1.

Mine No. 1052(u/g). Location: River Lot 38. Operator: J. E. Raymond. 1922-1923. Seam: 3' 10". Cover: up to 70±'. Area: 1/4a. Recorded production: 1229 tons (0.68 a.ft.). Estimate average mined thickness of coal at 3 3/4'; indicated recovery about 72 1/2%.

Remarks: Opened in Nov. 1922 and abandoned 29-iii-23. Both drift openings were below spring high-water levels. Area was actually about 5/16a, and thus the recovery value somewhat smaller. Nevertheless this well illustrates the typical high recovery made from one-season mines, where there is no concern over the workings standing firm 'til the next season starts.

There is a final plan dated 20-iii-23 that also shows Mine No. 1087. The survey tie-point is given as the S.E. corner of Sec 13-53-24-W4. Someone has written "Impossible" against the long north leg of the mapped traverse to the tie-point - and they're right. A plot of the traverse from the tie-point shows that the end of the traverse doesn't reach within 750' of the river. I plotted these workings as they are shown on the second (1" = 200') abandonment plan of Mine No. 1366.
Refs.: 1; 9.

Mine No. 1087(u/g). Location: River Lot 40. Operator: John Mather. 1922(?)-1924. Seam: 3' 8"(?). Cover: up to 60±'. Area: less than 1/4a. Recorded production (1923 only): 582 tons.

Remarks: This mine was opened sometime prior to 5-ii-23 and abandoned about 28-iii-23. The single opening was below spring high-water levels.

There is a final plan dated 20-iii-23 that also has on it Mine No. 1052, but it was not possible to use this plan's survey tie-point (See Remarks, Mine No. 1052). Instead, I plotted this mine from Mine No. 1052, using the relationship between these two mines that is shown on the foregoing (20-iii-23) plan.

The small drift immediately upstream of the entrance to No. 1087 is also shown on the 20-iii-23 plan. Its origin and extent underground are unknown.

In Jan. 1924 Mather opened another drift in River Lot 40. He abandoned this drift in Feb. 1924 because of the poor quality of the coal, and because he had struck old unmapped workings. The location of this drift in River Lot 40 is not known.
Ref.: 1.

Mine No. 1167. See text with Plate 10.

Mine No. 1366(u/g and strip). Beverly Mine. Location: u/g workings, lsd's 1 - 4, 6 - 8, Sec 13-53-24-W4, and parts of River Lots 36 and 38; strip mine, River Lot 42. 1931-1951. Seam: 3' 1"-9' 2", dip very gentle to the S.E. Cover: u/g workings, 150±'; strip mine, unknown. Known area, u/g workings only: 160 1/2a. Recorded production (total: 21 yrs of 21): 836,882 tons. Tonnage produced by the strip mine (operating period 1950-1951) is not known; it is estimated at no more than 20,000 tons. Estimate u/g production at 817,000 tons (453.9 a.ft.); average thickness of coal mined at 5'; indicated u/g recovery is about 57 1/2%.

Remarks: Hoisting shaft 148' deep; airshaft 140' deep. The final plan's survey tie-point is apparently the S.W. corner of Sec 18-53-23-W4, for this corner is labelled. However, the main (1" = 100') final plan, which carries the note "Abandoned April 17 1951", has on it the grid of the overlying streets. North of the splice in my map I plotted the mine workings from the N.E. corner of the intersection of 119th Avenue and 41st Street. South of the splice I used the second (1" - 200') final plan and plotted the workings from the N.E. corner of the intersection of 115th Avenue and 44th Street. This second of the final plans has on it the last of the u/g workings, south of 118th Avenue, and Mine No. 1052. This plan also carries the note "Abandoned April 17, 1951".

There is no apparent discrepancy between base map and reduced mine-plan; that is, in this case there appears to be a 1:1 correspondence between the maps.

No plan of the strip mine was found; its location within River Lot 42 is not known.

The seam in the central and eastern part of the workings had about 2 1/2' of top coal, a 1' parting, and about 5'-6' of good bottom coal. Most of the time in these areas only the bottom coal was mined, the balance being left for roof. In the extreme west, the mine plan gives the coal thickness as 37".

Along the N. and N.E. sides of the workings the seam is missing because of a washout. In these sections, water in sand and gravel on top of the coal proved troublesome. In some faces the coal was so weathered it could be dug with the hands.

In 1932 there were three caves in the workings that reached through the rock cover to the drift, and resulted in sand, gravel, and water inflows. In 1935, pillar caves resulted in water inflows, most probably from the surface.

In 1946 serious subsidence occurred along 44th Street between 115th and 116th avenues. For a distance of 75'-100' in this block, the amount of subsidence reached approximately five feet.

In 1949 a coal-cutter broke through into the old workings of No. 707, and the southern part of the mine (No. 1366) was flooded.

The longwall system of mining was introduced here in 1946 and a 120' face was tried. In Dec. 1947 the longwall method was abandoned.
Refs.: 1; 9.

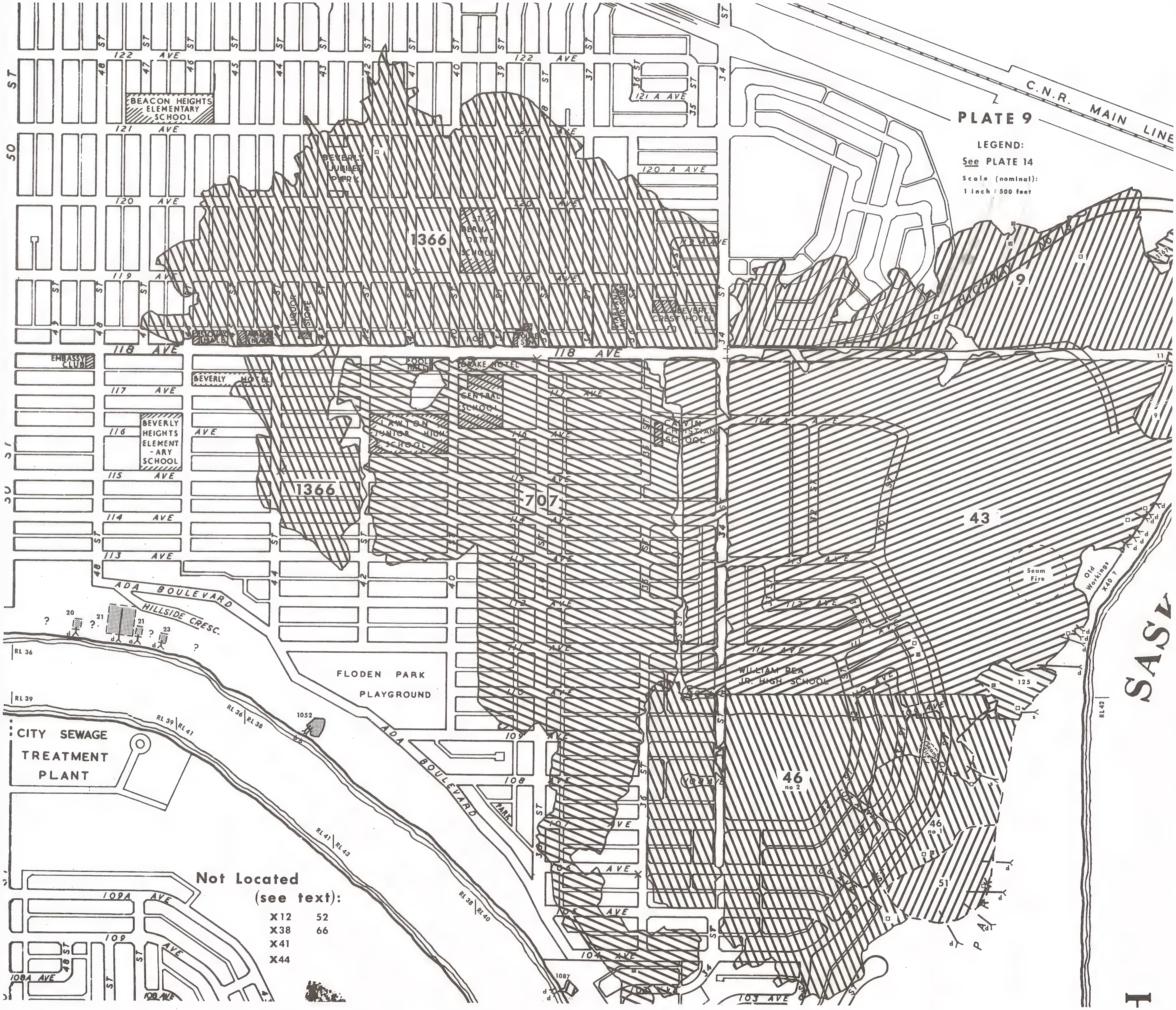


PLATE 9

LEGEND:
See PLATE 14

Scale (nominal):
1 inch : 500 feet

Not Located
(see text):
X12 52
X38 66
X41
X44

PLATE 10

Mine No. 7 (u/g). McAllister Mine. Location (approximate): lsd 9, Sec 7-53-23-W4. 1898-1899. Seam: probably 5 1/2' - 7'. Cover: probably less than 50'. Area unknown, but very small. No recorded production.

Remarks: This mine, opened in Dec. 1898, had two entries. In the files of Mine No. 8, the Mine Inspector reported on 1-iv-99 that the 'Pearce and Davis Mine [No. 33] was a few hundred feet west of the McAllister Mine'. There is a blueprint on the map roll of Mine No. 33 that shows that mine's workings up through Dec. 1913. On this blueprint is an area labelled "Old Creek Workings" and shown as part of Mine No. 8. The old creek workings were around the re-entrant in the western edge of the No. 8 workings as shown on my map. I believe the McAllister Mine was located here.

In Jan. 1901 the operator reported that 'I only had one [coal mine] for about three months'. There is a note dated 5-xii-03 with No. 7's records which says 'Closed into No. 4 - which is the same mine'. This is not correct. Mine No. 4 (X56/4/5 in this study) was in River Lot 25A. Classed as a very small mine.
Ref.: 1.

Mine No. 8 (u/g). Daly Mine. Location: lsd's 9 and 10, Sec 7-53-23-W4. 1902-1922. Seam: 5' - 9', horizontal. Cover: up to 130±'. Known area: 11 3/4a. Recorded production (20 yrs of 21; no production, 1921): 86,956 tons (48.31 a.ft.). Estimate average thickness of coal mined at 6 1/4'; indicated recovery is about 65%.

Remarks: Six drift entries are mapped; there were at least three others and perhaps more. There were two airshafts: the one mapped is of unknown depth. In 1904 a 3' X 3' X 30' airshaft was put down, 300' in the workings. It is not mapped and its location is unknown.

A final plan for this mine, with date of last survey 24-iii-20, carries the note "Abandoned 24th March 1920". The plan's survey tie-point is 660' due east from its Point "A", the extreme S.E. corner of the u/g workings, that is, the S.E. corner of the N.E.1/4, Sec 7-53-23-W4. This tie-point was used to plot the mine workings. There appears to be no significant discrepancy between base map and reduced mine-plan.

From Sept. 1921 until April(?) 1922 an entry pillar salvage operation took place. This work was within the workings mapped on the final plan of 24-iii-20.

A letter in the files dated 9-vii-65 reports the loss of a pony in a cave-in which resulted in a surface depression 5' wide and 5' deep. Another cave-in, refilled twice previously, had reopened nearby. Both holes were filled in and dirt piled on top of them.
Ref.: 1.

Mine No. 9. See text with Plate 9.

Mine No. 11/19/22 (u/g)(on Plate as No. 11). Clover Bar Mines Nos. 1 and 2. Location: in Road Allowance between Secs 7 and 18, T53-23-W4, west of the river (See Remarks). 1897 (or earlier)-1901(?). Seam: 6'6" - 7'. Cover: probably up to about 100'. Actual area unknown; shown on map: 3/4a. Recorded production (1 season of 4+): 46 tons.

Remarks: The first operator of record stated in Oct. 1898 that he was 'resuming possession'. His letter stated the mine was on the R.A. between Secs 18 and 19, 53-23-W4, and it contained a rough plan showing two drifts, two cross-cuts, and what I interpret as an airshaft. The Clover Bar seam does not extend as far north as the R.A. between Secs 18 and 19, and later evidence showed that the mine was in the R.A. between Secs 7 and 18.

The Mine Inspector reported in Feb. 1900 that there were actually two parallel mines with only 66' of pillar between them. In Feb. 1902 the inspector stated that they had opened up at the beginning of the 1901-1902 season and worked only a few weeks when the main tunnel caved. This was caused, he said, by a seam fire which had been burning a good many years in the vicinity of this mine.

Shortly after this, the records of the mine were closed into those of Mine No. 9. There is no plan that shows any part of the R.A. workings or that identifies any part of this mine. I have added this mine to my map else there would have been an unaccountable gap at the R.A. in the otherwise continuous workings. That the R.A. was mined out, here, is beyond question. A letter of 22-x-03 in the files of Mine No. 51, from O. H. Bush & Son, states that there was a tunnel of 200' in it (the road allowance) three years earlier.

It seems apparent from the files that this mine was more extensive than I have mapped it, and that it consisted of at least three sets of small workings with at least four entries and possibly one airshaft. It is probable that some of the workings of this mine are within the extreme S.E. area of Mine No. 9, as shown on that mine's final plan and my map.

By Feb. 1901 these workings had grown together to the point where Mine No. 19 was said to be the same as No. 11, and No. 22 (of 1898) was said to be one of the two workings of No. 11.
Refs.: 1; 2.

Mine No. 19. See Mine No. 11/19/22.

Mine No. 22. See Mine No. 11/19/22.

Mine No. 33 (u/g). Pearce's Mine. Location: lsd 10, Sec 7-53-23-W4. 1897-1902. Seam: 5' - 5'6". Cover: up to about 100'. Known area: 1 1/4a. Recorded production (1 yr of 6): 550 tons.

Remarks: All the materials on this mine are with the records of Mine No. 8, except for a No. 33 map roll. It proved possible, however, to separate this mine from No. 8 in both files and on mine plans. This mine is plotted from the same tie-point as Mine No. 8. In addition to No. 8's final plan, I used a 1904/05(?), 1" = 1 chain plan by Driscoll and a blueprint by Coté and Smith that shows the workings up through Dec. 1913.

Pearce and Davis abandoned this mine in late Feb. 1901. In Nov. 1901 the seam owners (Daly and Lindsay) were working in the mine. They were reported not to be mining at that time but to be re-timbering and sinking a 4' X 4' X 40' airshaft. The precise location of this airshaft is not known, but it was 300' in the workings and at the end of a 50' side-drift. The following season the owner/operators started a new drift (and a new mine, No. 8).
Ref.: 1.

Mine No. 43. See text with Plate 9.

Mine No. 69 (u/g). Blue Ribbon Mine. Location: lsd's 9 and 16, Sec 7-53-23-W4. 1902-1937. Seam: 6' - 8'5", horizontal. Cover: up to 120±'. Known area: 30 1/2a. Recorded production (34 yrs of 36): 180,620 tons (100.34 a.ft.). Estimate average thickness of coal mined at 6 1/4'; indicated recovery is 52 1/2%.

Remarks: Five drift entries are mapped; there was at least one other. Airshafts, two, virtually side-by-side. Apparently the northern (older) airshaft caved shut; it was 15' deep. The southern airshaft is 30' deep. From the oldest (northernmost) workings an underground air connection was made with the adjacent Mine No. 98 (of 90/98). The seam ran to 6' - 6'6" of bottom coal with 1' - 2' of top coal above a 1" - 5" clay parting. The top coal was left for the roof.

The final plan, with date of last survey as 9-xii-36, carries the note "Abandoned March 1937". The amount of extension of the workings in this 3-month interval is not known. Survey tie-point was probably the labelled N.E. corner of Sec 7-53-23-W4.

There is a 1915 blueprint which has the same tie-point but differs from the final plan in the placement of the old workings. This blue-print has on it the traverse to the tie-point (the final plan does not), and a plot of the blueprint's traverse checks with its mapped workings and with the adjacent workings of Mine No. 90/98; the final plan does not check on these points: the discrepancy is 50'. I used the blueprint to plot all 1915 and earlier workings, and plotted the younger workings from the final plan after adjusting it to correspond with the 1915 blueprint. Workings are plotted from the N.W. corner of Sec 8, rather than add to the clutter of this section-corner area on my map.

The discrepancy between base map and reduced mine-plan just reaches the level of significance: on the base map the mine workings apparently reach 40' too far south.

There were apparently some minor cave problems in and before 1931 in these workings. Note that this mine worked along the edge of, and at places into, the workings of Mine No. 8.
Ref.: 1.

Mine No. 89 (u/g). Stewart (Western) Mine. Location: lsd's 7 and 8, Sec 7-53-23-W4. 1903-1913. Seam: 7'6" - 8'. Cover: up to 130±'. Estimated area: 9a. Recorded production (10 yrs of 11): 46,615 tons. (Area and tonnage values are included with those of Mine No. 99.)

Remarks: There is no plan of this mine in the records. It was incorporated into the ground of Mine No. 99 in 1915 after being operated by the Great West Coal Co. (owners of No. 99) since 1912(?).

Mine No. 89's original location is known from the Humberstone letter of 3-ii-04 in the file of Mine No. 74, from the sketch of this mine's location in the files of Mine No. 43 (April 1904), and from photo B.1608 of the Brown collection. This photo shows the Stewart tipple with the tipple of Mine No. 8 in the immediate background.

The top coal of the seam (about 1 1/2') was commonly left for the roof. In 1904 arrangements were made for an u/g ventilation connection with Mine No. 8.

A roof-cave resulted in one fatality u/g in 1904. In 1907, robbed pillars resulted in creep in one entry that decreased the entry heighth from 8' to 4'. In Nov. 1908 the Mine Inspector closed down the East Entry as unsafe; caving was reported in the workings in the same year.

I have estimated the extent of these workings within the grounds of No. 99 from seam thickness and production record. This estimated boundary is placed on my map primarily for the sake of completeness of record.
Refs.: 1; 5.

Mine No. 90/98 (u/g)(on Plate as No. 90). Fraser-MacKay Collieries. Location: lsd's 11 - 14, Sec 8-53-23-W4 (See Remarks). 1904-1941. Seam: 6' - 6'6", horizontal. Cover: up to 110±'. Known area: 161 3/4a. Recorded production (38 yrs of 38): 1,186,426 tons (659.13 a.ft.). Estimate average thickness of coal mined at 5 1/2'; indicated recovery is about 75%.

Remarks: Three drifts; airshaft 45' deep; hoisting shaft 100' deep. Underground ventilation connection between the N.E. drift and Mine No. 91. Underground ventilation connection between the S.W. drift and Mine No. 69. The two N.E. entries were actually in lsd 16, Sec 7-53-23-W4.

Final survey plan dated 25-iii-41. Survey tie-point is the N.E. corner of Sec 7. I plotted these workings from the N.W. corner of Sec 8. There is a significant discrepancy between the base map and the reduced mine-plan, in that the workings apparently reach about 90' too far south (see solid line under pattern of Mine No. 99). There appears to be no significant discrepancy in departure (east-west).

The two northern drifts constitute the earliest workings of No. 90. The southern drift is to the old workings of No. 98 which were eventually incorporated into the ground of No. 90.

A rock-fall resulted in one fatality underground in 1926. In 1935 a cave-in blocked the inby end of the airway; an opening was driven around it.

The above indicated recovery figure may be too low. In Watson's report to the Town of Beverly in 1936 he stated that Fraser-MacKay had the most efficient operation in the area, were mining in a five-foot seam, and were approaching an effective recovery of 90%. If his seam thickness figure is correct, the above indicated recovery value should be about 82 1/2%. Watson may well have been right, if you recall my discussion of the Clover Bar seam and district in the Introduction. The seam thicknesses I gave above are those I found in the reports; they don't indicate whether or not this is bottom-coal thickness or total seam thickness. If the latter, then 1' - 1 1/2' of coal may well have been left for the roof.

This is the oldest of the three very large mines of the Edmonton Area.
Refs.: 1; Watson, 1936.

Mine No. 91 (u/g). Ottewell [Clover Bar] Mine. Location: lsd's 15 and 16, Sec 8-53-23-W4, and lsd's 2 - 4, Sec 17-53-23-W4. 1904-1949. Seam: 4' - 7'. Cover: up to 85±'. Known area: 66 1/4a. Recorded production (45 yrs of 46): 419,531 tons (233.07 a.ft.). Estimate average thickness of coal mined at 5'; indicated recovery is about 70%.

Remarks: Six drifts are mapped; the seventh long drive on my map may have been either a drift or an airway. There were probably other drifts in the central section of the outcrop band. Airshafts (two): East, 82' deep; West, 80' deep. Hoisting shaft, 82' deep. There is a drainage-way and return airway connection with Mine No. 699 just east of the north centre of Sec 8. There was an u/g ventilation connection between the No. 3 workings and the drift workings of Mine No. 90.

Although the last work underground was reported done in Mar. 1949, the final plan is dated 20-v-50. The survey tie-point is the N.E. corner of Sec 7. I plotted the workings from the S.W. corner of Sec 17 to avoid additional clutter at this section corner. I noted no significant discrepancy between base map and reduced mine-plan, except between the curvatures of the railroad and its barrier pillar. I believe the major part of this apparent discrepancy is attributable to the base map.

It is not possible to separate the production of the old No. 3 workings from that of the whole mine. The location of the Nos. 1 and 2 workings is not known. The final plan does not show the No. 3 workings. I found these on a 1" = 60' undated, unsigned, blueprint (by Cautley?) in the files of No. 91, not on the map roll. I transferred these workings to my map with scale and protractor, plotting from the S.W. corner of Sec 17.

This mine has a history of minor and major subsidence problems, extending at least through the period 1911-1950. In 1917 workings under the Road Allowance between Secs 8 and 17 caused marked subsidence damage at prairie level. Surface subsidence amounted to about three feet; a 3"-wide crack 350' long paralleled the road; a cave-in broke the surface with a 10'-diameter hole, 8' deep just three feet from the R.A. fence. Two cave-in depressions are shown in this vicinity on the final plan of the adjacent Mine No. 90. The damage was caused by pillars being pulled under the R.A.

In 1918 part of the mine was flooded by a water inflow while extracting pillars. The water probably came from the surface.

Note that the workings of this mine and No. 699 interpenetrate slightly along their extreme eastern contact.
Ref.: 1.

Mine No. 98. See Mine No. 90/98.

Mine No. 99 (u/g). Black Diamond Mine. Location: lsd's 5-6, 11-14, Sec 5; lsd's 1-3, 6-11, 15 and 16, Sec 6; lsd's 1-2, 7 and 8, Sec 7; lsd's 3-6, Sec 8 - all of the foregoing in T53-23-W4. 1905-1952*. Seam: 5' - 8', undulating, about horizontal. Cover: up to 200±'. Known area: 693a*. Recorded production (46 yrs of 48): 3,125,985 tons* (1736.66 a.ft.). Estimate average thickness of coal mined at 5'; indicated recovery is about 50%.

*Includes production and areas of Mines No. 74 (1903-1911, Plate 12) and No. 89 (1903-1913).

Remarks: Ten drifts are mapped. There were probably others, especially in the southwestern river bank, until the extreme high flood of mid-1915. Slopes (three): Main Hoisting Slope (central) 17°, map-length 422'; Fan Slope (south, on river) 35°, map-length 125'; slope (north, on river) 22°, map-length 55'. Airshafts (two): East Angle 150' deep; 10 West (extreme S.W.) 183' deep. The 5 West (Air) Shaft referred to in the abandonment proceedings of this mine is the airshaft of Mine No. 283, to which No. 99 drove 5 West off 3 South in 1937. This connection is not shown on my map. There is no record, in the abandonment papers, of the northern river slope being caved shut or otherwise properly closed.

Mines No. 74 and 89 both occur within the ground of No. 99 which absorbed them, although each had an earlier independent existence. The history of the "Old Workings" just south of No. 74 (Plates 11 and 12) is not known. The area of these old workings (estimated at 2 3/4a) is not included in that of No. 99.

Mine maps of two different scales were used to plot these workings. The old mine plans, up to 1939, are at 1" = 100'. After that date a scale of 1" = 2 chains (132') was used. I used the older maps at 1" = 100' as much as possible because this scale could be handled by the pantograph. The northern third of the workings was plotted from a blueprint with the inclusive dates 27-vi-29 and 27-xii-30 because of the greater detail shown on this blueprint. No survey tie-point was indicated on this plan. I plotted this portion of the workings from the quarter-section point on the west boundary of Sec 8.

The central third of the workings was plotted from the 1" = 100' blueprint with the latest date: 27-vi-39. This portion of the workings was plotted using as tie-points two boundary points on opposite sides of the workings that were common to both the foregoing plans.

The southern third of the workings was transferred from the abandonment plan, dated 31-iii-52, with the scale of 1" = 132'. This scale my pantograph could not handle so the boundary of this part of the workings was plotted as a pair of traverses from the south centre of Sec 6.

Plotting these workings from both north and south was done deliberately to place the area-of-discrepancy (between dashed and dotted lines on my map) within the boundary of the workings. I learned on my first attempt that the discrepancy was large enough to cause the boundary to present an unreal set of relationships with the surface features if the workings were plotted from any single point. It is obvious that there is significant discrepancy between base map and reduced mine-plan. The maximum discrepancy is about 300' of latitude in the approximately 7800' north-south length of the workings. The maximum discrepancy in departure is about 125'. Both these values can be measured at the east end of the area-of-discrepancy. The values at the west end are less by about 50' in latitude and 100' in departure. Part of this difference is attributable to the fact that I adjusted the S.W. traverse (plotted from the S. centre of Sec 6) to common boundary points with Mine No. 283, as this latter was plotted from its own archival map and not as it was shown on the final plan of No. 99. This may have been an error in judgement on my part. I regard the discrepancy as measured at the east end of the area-of-discrepancy as being the best determinant of the difference in scales between the base map and the reduced mine-plan.

To measure the correct area of these workings the zone of the area-of-discrepancy was planimetered twice.

Two holidays are plotted within the workings. The northwestern one covers the lower course of a gully where the cover was apparently too thin to permit of mining under it without the possibility of flooding the mine. The southeastern holiday is about the Naco Airlines No. 1 well.

It will be noted that the mine workings apparently project well out into the river. Inasmuch as the seam outcropped above river level, this would indicate a very large amount of erosion since these workings were abandoned. The actual explanation is that there is a marked difference in river-bank positions on base map and mine plan, and the mine plan appears most correct.

In July 1915 the records indicate that the mine had been flooded. This undoubtedly took place through old river-bank drifts which were no more than 15' - 18' above 'normal' high waters. This flooding was probably the direct cause of the construction of the two river-bank slopes.

In Dec. 1940 the Mine Inspector reported water coming into the mine from the old Marcus (No. 699) workings. The manner by which water from the Marcus workings gained access to this (No. 99) mine is not apparent on the plate. However, I learned from an old Black Diamond miner that while he was in the N.E. boundary workings of No. 99, he could hear tool noises (picks) in the Marcus workings. He stated that such noises normally could only be heard through 6' - 10' or less of coal. He believes that the Marcus people removed all but this small part of the supposed 120' barrier pillar between the workings of Nos. 99 and 699. The water coming into No. 99 flowed freely through the thin pillar between these workings.

Fire broke out in the seam near the Fan drift in 1929 and was still burning and troublesome in Sept. 1930. Other seam fires occurred in 1934 and 1939.

Cave-ins were reported in the workings in 1915, 1925, and 1934. Those that occurred in 1934 were related to the second seam fire. In Feb. 1920 the Mine Inspector commented on the heaving of floors in places.

In Oct. 1949 a 500' longwall was in operation. The duration or extent of this system of mining is not known.
Refs.: 1; Macauley, 1971.

Mine No. 699 (u/g). Marcus Collieries. Location: lsd's 1-2, 7-10, 15 and 16, Sec 8; lsd's 5-6, 11-12, and 13, Sec 9; both Secs in T53-23-W4. 1917-1940. Seam: 3'4" - 6'2" (bottom coal). Cover: range about 110' - 140'. Known area: 274a. Recorded production (24 yrs of 24): 1,096,777 tons (609.32 a.ft.). Estimate average thickness of coal mined at 4 3/4'; indicated recovery is about 47 1/2%.

Remarks: Hoisting shaft 125' deep. Airshafts (three): West 125' deep; East 130' deep; S.E., depth ?. Drainage connection with Mine No. 91, in N.W. corner of workings. This connection is supposed to have been built with the drainage pipe passing through two concrete stoppings, one of which had an iron door to permit inspection of the pipe. Elsewhere, however, this is referred to as a drainage and ventilation connection. The following seam section is given on the mine plan: (top) coal 10", clay 5"; (bottom) coal 6'2"; clay floor.

Only one mine plan is on the map-roll; a two-section, torn, taped, and distorted blueprint. The date of last survey 22-v-39; the mine ceased operations on 6-iii-40. The total amount of extension of the workings in the 9 1/2-month interval between the above dates is not known. However, there is evidence to indicate that part (much?) of the 120' barrier pillar between Nos. 99 and 699 was removed by Marcus miners. See Remarks, Mine No. 99.

No survey tie-point is indicated except for the label on the N.E. corner of Sec 8. I plotted the mine workings from the north boundary quarter-section point.

The amount of the discrepancy between base map and reduced mine-plan is not determined. It is at least 40' in the east, for the East airshaft should be just outside the railroad right-of-way. Correspondence with the plot of Mine No. 90 to the west is good. This probably indicates that this (No. 699) mine's workings reach proportionately too far south on the base map. That is, inasmuch as Mine No. 90 apparently reaches about 90' too far south on the base map, this mine (699) may reach about 130' - 140' too far south on the base map.

This mine operated under five different names, and ceased operations to go into liquidation. In view of this, the above recovery value is surprisingly high, and makes me suspicious of my 'average thickness of coal mined' figure. It may well be that this figure should be somewhat greater, and the recovery value somewhat lower.

Minor caving occurred in the workings in 1920(?). In 1935 a major squeeze occurred, and in 19[illegible] a cave blocked the return airway.

The Mine Inspector reported on 3-vi-40 that the hoisting and fan shafts were being filled. On 12-vi-40 he reported that since his previous visit some movement had occurred in the ground immediately west of the hoisting shaft (now filled), and that there was a small cave there.

On 2-ix-31 one of the inspectors wrote in a letter, respecting the surface of Sec 8 over the mine workings, that 'subsidence is certain to take place, but I believe same will be a gradual settling'.
Ref.: 1.

Mine No. 1167 (u/g). Booth Mine. Location: lsd's 1 and 2, Sec 18-53-23-W4. 1924-1942. Seam: 2'8" - 5'. Cover: up to 120±'. Known area: 8 1/2a. Recorded production (19 yrs of 19): 30,973 tons (17.21 a.ft.). Estimate average thickness of mined coal at 3 1/2'; indicated recovery is about 57 1/2%.

Remarks: Two drift entries with airshaft (50' deep) in northern entry. Note that both highway and railroad bridges are about 100' too far to the S.S.W. on the base map. The airshaft actually is several tens of feet south of the highway.

Final plan with date of last survey 2-iv-42, and note "Mine Abandoned". Survey tie-point is the N.E. corner Sec 7-53-23-W4. To minimize the discrepancy between base map and reduced mine-plan that would probably occur over this distance, I plotted these workings from the drift entries of Mine No. 9, mapped by the same mine surveyor and shown on this (No. 1167) plan. No significant discrepancy was detected between the base map and reduced mine plan in the plot of Mine No. 9.

This mine found old workings in the entry drift and in the re-entrant in the east side of the mine. It's probable that much of the ground between the entries of Nos. 9 and 1167 is worked out. Nothing of the history of these old workings is known. The workings of No. 1167 were carried around and into the east end of the workings of Mine No. 9.

And that's all there is to say about it: a small, quiet, efficient and trouble-free family operation.
Ref.: 1.

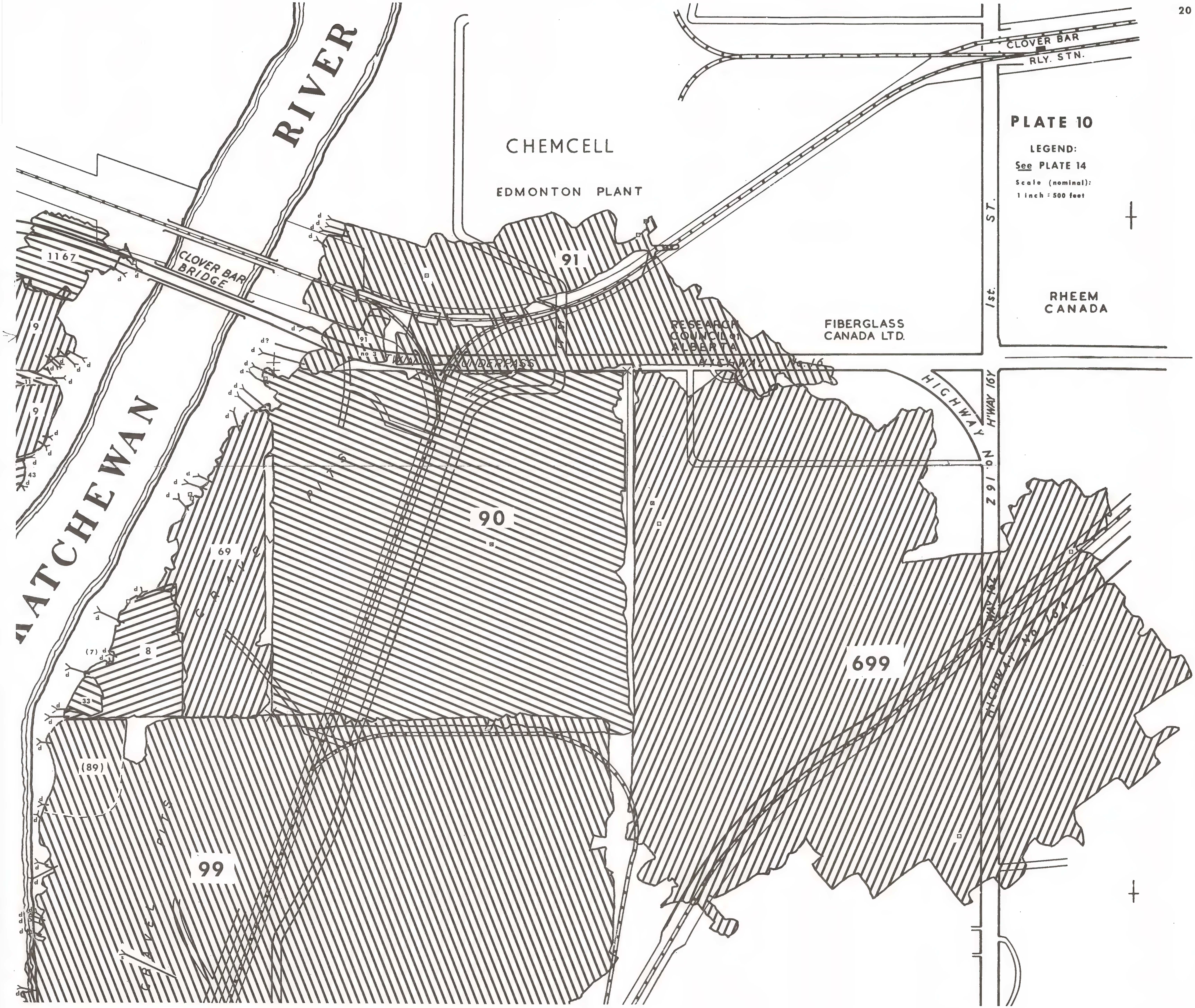


PLATE 10

LEGEND:
See PLATE 14

Scale (nominal):
1 inch : 500 feet

PLATE 11

Mine X13 (u/g). Location: unknown, but in River Lot 42. Operators: unknown.

In Jan. 1884 the Edmonton Bulletin reported that an 18" seam was being worked on J. Holland's claim [RL 42] four miles below town, by Little Mountain people. The seam was at about water level in summer; 10' - 15' above low water levels.

At the most, this operation probably consisted of a series of small gopher-holes. It is not known how long this thin seam was mined here, but mining in it probably stopped with the opening up of the Clover Bar seam. Classed as a very small mine.
Ref.: 2.

Mine X18 (u/g). Location: unknown, but in NW1/4 south of the river, or SW1/4, Sec 6-53-23-W4. Operator: G. A. Simpson.

In Nov. 1884 the Edmonton Bulletin reported that the operator 'is about opening a coal drift on the bank of the river on his claim'. Simpson's claim was located through the Land Titles Office. It is not known how long this mine operated, but Simpson sold out in Oct. 1887 and went to the coast. See Remarks, Mine No. 96.

Classed as a very small mine.
Ref.: 2.

Mine X63 (u/g). Location: unknown, but in NW1/4 south of the river, or SW1/4, Sec 6-53-23-W4. Operators: J. A. Trimble & Son.

The Mine Inspector reported on 22-i-03 that 'this mine has just been started up under lease, but will only be worked so long as ice is on the river'. Trimble returned the 1902 Annual Return form with notes on it to the effect that the mine was opened in Jan. 1903, his lease expired in April 1903, and the seam owner was H. Twyford.

The materials of the above paragraph were found in the file of Mine No. 74 with which this mine (X63) was confused. However, Humberstone in his letter of 21-iv-04 (file, Mine No. 43) located Mine No. 74 accurately, and stated in his letter of 26-ii-04 (file, Mine No. 74) that 'report also said that last winter [1902-1903] Tremble or Trembles were mining coal on the adjoining quarter-section to the one on which Milner & Co. [Mine No. 74] now are'.

Humberstone wasn't quite right, for the Trimbles were actually on the second quarter-section upstream from No. 74. However, there is no doubt as to the existence of these two (No. 74 and X63) as separate mines. Twyford's property was located through Land Titles Office records.

There is no record of production and no mine plan. Classed as a very small mine. See Remarks, Mine No. 96.
Ref.: 1.

Mine X64 (u/g). Location: River Lot 45. Operator: D. S. Fulton.

This operation started before 8-ix-32 and was apparently abandoned on or before 4-x-33, after being worked intermittently. It consisted of a slope (about 14°, map-length about 105') and a short exploration drive from the foot of the slope. In the middle of Aug. 1933 the drive was in about 40'. It is not known how much farther the drive was carried before abandonment. The seam was reported to be only 18" - 20" thick.

The above materials were found in the file of Mine No. 69. There is no recorded production and no mine plan. Beach stated that 30" of coal was found, and placed the slope on his map, from whence I got it.

Classed as a prospect.
Refs.: 1; 9.

Mine No. 96 (u/g). Location: given as SW1/4, Sec 6-53-23-W4 (operator also owned the fraction of NW1/4, Sec 6, south of river). Operator: Hugh Twyford. Seam: 9' - 9'6". Cover: not known.

Remarks: No production of record; no mine plan. Reported on by the Mine Inspector on 10-ii-05 as a 'mine opened this winter by H. Twyford, now abandoned'. Twyford, who was apparently asked for a plan of his mine, replied on 22-ii-05 that 'If you can oblige me with a plan of said seam from the time it was first opened I could then fill in what has since been done from the time I have owned the property'.

Dowling described this property and gave the following seam-section: top coal 18", clay parting 4" - 6"; bottom coal 7' - 7'6", which was mined.

It is obvious from Twyford's comment and from the records of mines X18 and X63 (which see) that mining took place into the river bank of the west half of Sec 6, south of the river, over a period of 20+ years, probably intermittently. It is likely that the workings are multiple and individually small.

Mine No. 96 is classed as a very small mine.
Refs.: 1; 8.

Mine No. 99. See text with Plate 10.

Mine No. 293 (u/g). Great West Mine. Location: lsd's 3, 6 - 7, and 10, Sec 6-53-23-W4. 1911-1914. Seam: 5' - 6'. Cover: 170' - 190'. Known area: 24 3/4a. Recorded production (4 yrs of 4): 86,904 tons (48.28 a.ft.). Estimate average thickness of coal mined at 4 1/2'; indicated recovery is about 42 1/2%.

Remarks: Hoisting shaft 205' deep; airshaft 182' deep.

There is only one plan on the map-roll: a two-section, unsigned, torn and patched blueprint. A date of 1-iv-15 is shown against the u/g workings, although mining ceased on 25-xii-14. No survey tie-point is given. I plotted the workings from the south-centre quarter-section point of Sec 6-53-23-W4. The discrepancy between base map and reduced mine-plan is believed not significant. When plotting the southwestern part of Mine No. 99, a discrepancy of about 40' of departure was noted at boundary points common to the two mines. This discrepancy was adjusted by bringing No. 99's boundary into agreement with that of No. 283.

A Mine Inspector reported on 22-i-13 that the longwall system was being tried. The extent or duration of this type of mining is not known.
Ref.: 1.

Mine No. 707. See text with Plate 9.

Mine No. 1104 (u/g). Location: lsd 15, Sec 36-52-24-W4. Operator: Thomas Mather. 1923-1924. Recorded production (2 yrs of 2): 237 tons.

There is no mine plan. The location and extent of this mine has been added onto the final plan of Mine No. 1393 in blue ink - not by the mine surveyor. A line on 1393's final plan appears to indicate that a traverse was run to connect the workings of 1104 and 1393. I plotted these workings from the tie-point shown on the final plan of Mine No. 1393.
Ref.: 1.

Mine No. 1393 (u/g and strip). Ottewell [Fulton Creek] Mine. Location: lsd's 10 and 15, Sec 36-52-24-W4. 1932-1950. Seam: 5'-7'. Cover: underground workings up to 50±'; strip-pits, not known. Known area: underground, 27 1/2a; strip-pits, 3 3/4a. Recorded production (17 yrs of 19: no production 1934-35): 224,914 tons. Estimate strip mine production at 20,000 tons; underground production at about 205,000 tons (113.9 a.ft.). Estimate average thickness of coal mined underground at 5 3/4'; indicated recovery is about 72 1/2%.

Remarks: Hoisting shaft 42' deep; airshaft 40'(?) deep. Four drifts off the ravine in the N.E. part of the workings. I have assumed that the prospect shaft sunk in 1934 became the airshaft.

The final plan is dated 20-v-50. The survey tie-point is an iror pin on the southern boundary of the original road allowance, 250' east o the mid-section line. I plotted the workings from this point. There is no significant discrepancy between base map and reduced mine-plan.

Stripping operations commenced about Oct. 1944 and both underground and strip mining continued intermittently until early/middle 1946. Apparently only strip mining was done after that. In 1945 the underground workings were reopened by slope and entry. This slope does not appear on the final plan; its location is unknown.

A cave-in is shown on the final plan close south of the south-east corner of the centre strip-pit. It is labelled "Air vent", and obviously was an open connection with the underground workings. No other indication of caving was noted in the records, but with the shallow cove these workings had, caving would be expected.

A company letter of 25-xi-44 stated that the hoisting shaft was caved about full and fenced off, the airshaft was converted to a well, and the ravine entrance was in use as a root cellar. No mention was made of the other openings off the ravine.
Ref.: 1.

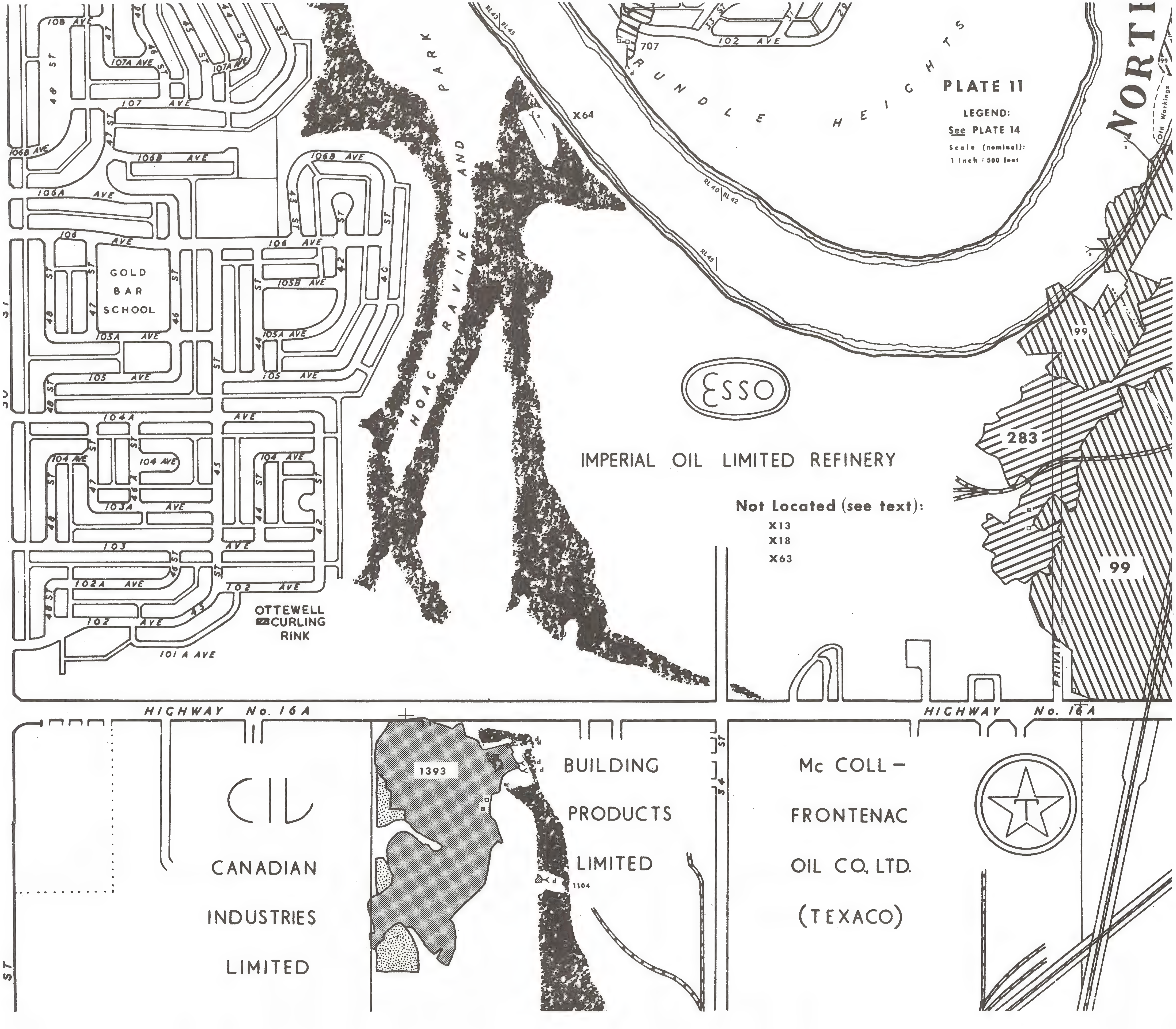


PLATE 11

LEGEND: See PLATE 14

Scale (nominal): 1 inch : 500 feet

Not Located (see text):
- X13
- X18
- X63

PLATE 12

Mine No. 74 (u/g). Milner Mine No. 2. Location: lsd 2, Sec 7-53-23-W4. 1903-1911(?). Seam: 7' - 8'. Cover: up to 120±'. Estimated area: 2a. Recorded production (7 yrs of 9): 9,860 tons. Area estimated on bases of reported production, estimated mined seam thickness of 5 1/2', and recovery of 50%.

Remarks: There is no mine plan. In 1903 twin drifts, 45' apart (not on the plate), were driven to open up this mine. In 1908 it was relatively unworked. The operators (the Milner Benner Coal Co.) had Mine No. 46 under lease, and got most of their coal from No. 46. The production (unknown) from this (No. 74) mine is included with that of No. 46 on the latter's Annual Return for 1908.

No production was reported for 1911, yet the Mine Inspector reported on 14-ii-11 that there were 21 men working two shifts and producing 50 tons/day. It is probable that in 1911 this mine was being operated by the Great West Coal Co., who later purchased the property. Mine No. 74 appears to have lost its independent identity at this time (1911). Eventually the ground of No. 74 was incorporated into that of Mine No. 99 on the latter's mine plans. Both tonnage and area of No. 74 are included in those values given for No. 99.

The approximate position and size of No. 74 are included for completeness of record.

Refs.: 1; 8.

Mine No. 99. See text with Plate 10.

Mine No. 283. See text with Plate 11.

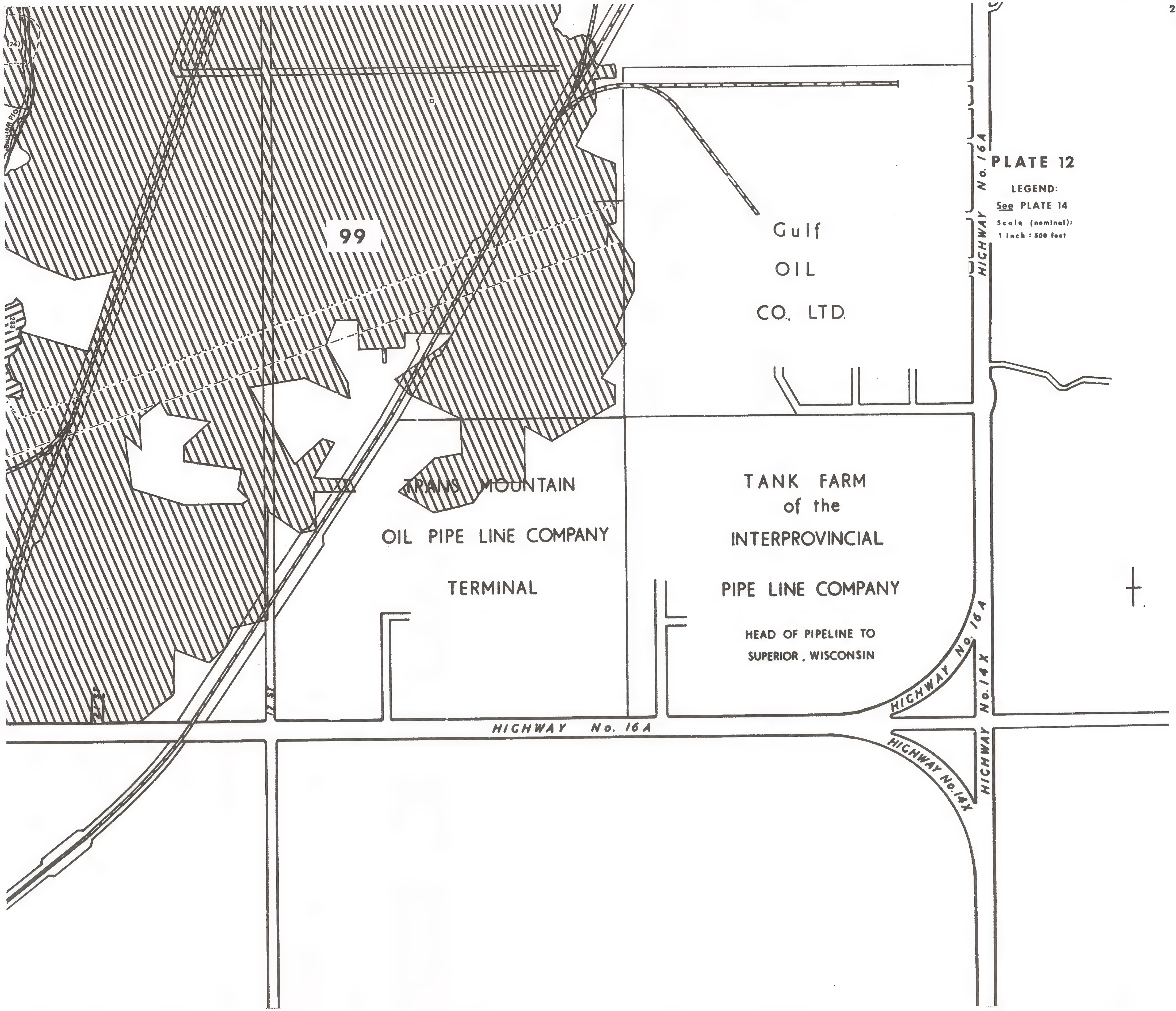

99
Gulf OIL CO. LTD.
TRANS MOUNTAIN OIL PIPE LINE COMPANY TERMINAL
TANK FARM of the INTERPROVINCIAL PIPE LINE COMPANY
HEAD OF PIPELINE TO SUPERIOR, WISCONSIN
HIGHWAY No. 16A
HIGHWAY No. 16A
HIGHWAY No. 16A
HIGHWAY No. 14X
HIGHWAY No. 14X
HIGHWAY
17 St

PLATE 12

LEGEND:
See PLATE 14
Scale (nominal):
1 inch = 500 feet

PLATE 13

Mine No. 1427 (u/g). Kent Mine. Location: lsd's 13 and 14, Sec 19; lsd's 3 - 6, Sec 30; both in T52-23-W4; lsd 16, Sec 24; lsd's 1 and 8, Sec 25; both in T52-24-W4. 1933-1945. Seam: 2'4" - 6'. Cover: 140±' - 170±'. Known area: 136 1/2a. Recorded production (13 yrs of 13): 577,510 tons (320.84 a.ft.). Estimate average thickness of coal mined at 4'; indicated recovery is about 60%.

Remarks: Hoisting shaft 165' deep; airshaft, depth ?. The final plan bears a 23-vii-45 abandonment date. The survey tie-point is the S.W. corner of Sec 30-52-23-W4. The workings are plotted from this point. Discrepancies between base map and reduced mine-plan are significant. The workings appear to reach about 160' too far north, and about 180' too far east, of the S.W. corner of Sec 30. West and south of this plotting point, the discrepancies will be proportionately much less.

A Mine Inspector said of this mine on 7-ix-35 that the 'natural conditions I believe the worst in the Province'. The mine had a very bad roof, a bad floor, was wet, and the timbers always carried plenty of weight. In the oldest workings, in the central and N.E. parts of the mine, it was difficult to keep 8' rooms open. The floor would heave a few sets back from the face, keeping water at the face. Entries were brushed as much as four feet, making 10' of excavation. Pillars developed over a six-month interval were forced 30" - 36" into the pavement.

It was calculated that in the twelve months, July 1935 to July 1936, recovery was only 21% of development. However, so great an area was abandoned and lost, primarily because of the excessive weight on the mine, that a disproportionately large part of the total mineable area was lost.

In the older workings, caving occurred to a limited extent, breaking up to a heighth of about 15' where a small seam of coal occurred. The caving appeared to stop there; no case was reported of caving up to the glacial materials.

As a result of these problems the longwall system was introduced in mid-1937. The system was successful in this mine and most of the area was worked by, and production derived from, longwall panels. Panel sizes ran up to 400' X 2000+', and the seam was worked down to thicknesses of about three feet. There is no doubt but that the recovery from the longwall mining was markedly greater than the 60% average value I give, above.

It was estimated in 1936 that surface subsidence would not in any place exceed four feet, despite the heighth of some underground excavations. A Mine Inspector reported on 12-iv-39 that the surface of the Road Allowance lease showed signs of gradual subsidence - small cracks. On 9-ii-42 the same inspector reported that the No. 6 longwall had crossed the Cooking Lake Highway (number 14) and that subsidence had taken place. Between the packs at each end of the wall settlement was gradual, with a maximum lowering of the surface of 2 1/2' - 3 1/2', tailing out to either side. He found that this caused no interference with the highway traffic.

The roadways (alongside the panels) under the Road Allowance east of the S.W. corner of Sec 30, were heavily timbered (cogged) upon abandonment of this mine.

Beach suggested that the seam mined here was the Lower Clover Bar seam, rather than the Clover Bar. I found nothing in the records to support this suggestion.
Refs.: 1; 9.

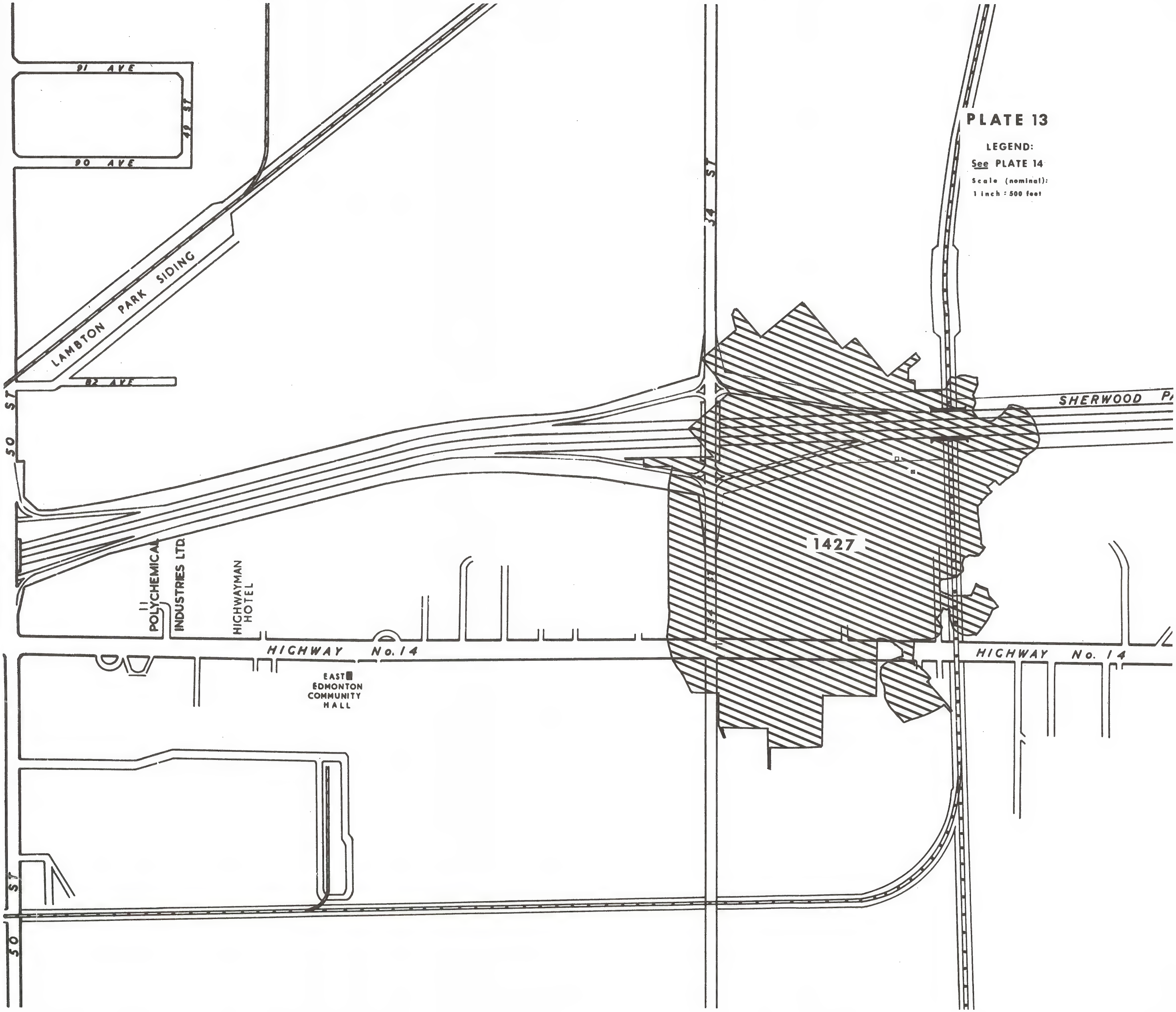


PLATE 13

LEGEND:
See PLATE 14

Scale (nominal):
1 inch : 500 feet

PLATE 14

Mine No. 156 (u/g). Catherine Mine. Location (approximate): lsd 10, Sec 11-54-24-W4. 1907-1908. Seam: 4'6" - 5'. Cover: 30±'. Area not known. Recorded production (2 yrs of 2): 1320 tons.

Remarks: No mine plan. Hoisting shaft 34' deep; no airshaft.

The Annual Return for 1909 carries the note "Mine has been closed for the entire year and no work of any kind carried on". Nothing more is known of the actual operation, for the operator apparently walked away from it.

The shaft, which was left open, has been used as a farm refuse-pit and is now nearly full - mostly with rusty metal.

The shaft location was determined by odometer from the N.E. corner of the section to the Fokema farm driveway, and thence by pace-and-compass traverse.
Refs.: 1; 9.

Mine No. 164 (u/g). Location (approximate): lsd 7, Sec 24-53-24-W4. Operator: Belmont Coal Co. 1908. Seam: none found. No production.

Remarks: The material in the folder of this mine relates entirely to a 24-viii-19 letter from F. B. Smith with its accompanying pencil-on-linen map at a scale of 1 inch equals 1/2 mile. This map shows the shaft location as Smith remembered it 11 years later, and carries a note by the shaft location: "108' water, sand, and loose coal". The Clover Bar seam was found to have been removed by erosion. Nothing else is known of this operation.

Classed as a prospect.
Ref.: 1.

Mine No. 267 (u/g). St. Albert Collieries. Location (approximate): lsd 13, Sec 28-53-25-W4. 1911-1916. Seam: 7'6". Cover: about 300' to 330'. Area not known. Recorded production (4 yrs of 6; no production 1911-1912): 28,869 tons.

Remarks: No mine plan. The first item in the file is a company letter of 2-ii-12 which states that they had discontinued sinking Nos. 1 and 2 shafts, each at depth 82'; that they would probably abandon No. 2; that eventually they would complete No. 1 for an airshaft; and that they had commenced to sink another shaft 150' east of No. 1.

The location of this third (hoisting) shaft is known. It was examined by mine inspectors in both 1949 and 1962. This shaft was a concrete caisson in its upper part, elliptical in plan, about 30' X 27' outside, and had a depth of 322'3" to the bottom of the mined seam. Its position was determined by odometer from the S.W. corner of the section to the gate about 125 yards south of the N.W. corner of the section, and from the gate by pace-and-compass traverse.

There is no indication of any old shaft 150' west of the hoisting shaft, nor is there any record that No. 1 was ever completed as an airshaft. However, the Mine Inspector on 8-ix-49 reported on the Main Shaft and airshaft (15' X 12'). The only feature that I found which could possibly have been his 'airshaft' was a mound of earth with a 8' X 8' X 5' conical depression in it - the northern 'airshaft(?)' on my map. This may be the old No. 1. The second airshaft(?) I mapped, in the S.W., is a much smaller depression (7' X 5' X 2 1/2') of lower elevation, out in a field. This may be the old No. 2 shaft.

So far as the records show, ventilation was always by a bratticed compartment of the hoisting shaft to the upper coal seam, thence by a 12' drop-pit to the lower, mined, seam.
Refs.: 1; Doty, 1916.

Mine No. 741 (u/g). Location (uncertain): 'near 120 Avenue and 130 Street', Sec 7-53-24-W4. Operators: Sugars, Jackson, and Ring. 1918. Seam and cover unknown. No production of record.

Remarks: No mine plan. In operation from March to June, 1918. Nothing known of the operators' findings, except that they were unsatisfactory. Positioned on the basis of the street pattern shown on Driscoll and Knight's Map of the City of Edmonton (7th ed.).

Classed as a prospect.
Ref.: 1.

Mine No. 943 (u/g). Location (approximate): lsd 4, Sec 11-54-24-W4. Operator: Belmont Coal Co. 1921-1922. Seam and cover not known. No production of record.

Remarks: No mine plan.

There are only two items of importance in the file. The first is a letter from a city realty firm which starts out "This unfortunately is a Coal Company without coal", and ends up stating that no coal was taken out, and that the company was in liquidation. The second letter (23-iii-22) stated that the mine could be considered abandoned.

Although the above correspondence refers to work on a 'slope and tipple', it is apparent that a shaft, rather than a slope, was put down to some unknown but considerable depth. This shaft was left open on abandonment, has been used as a farm refuse-pit for 50 years, and is reported by the present property holders to be fairly deep yet.

The position was determined by odometer from the N.W. corner of Sec 11 to a point on the road allowance opposite the spoil pile, and thence part by pacing and part by estimate as to the depth within the stock pasture.

The most interesting thing about this operation, classed as a prospect although mapped as a shaft, is that the small spoil pile has little or no vegetation established on it after 50 years.
Ref.: 1.

Mine No. 1389 (u/g). Location (uncertain): lsd 1(?), Sec 28-53-24-W4 (See Remarks). Operator: Deep Seam Coal Syndicate. 1932-1934. Seam: 7'8" (never reached). Cover: 250±'. No production.

Remarks: No mine plan. Location may be in lsd 2, adjacent to mapped position. The map position is that given me by a local resident who saw the large spoil pile across the fields from his house for years, before the recent housing build-up.

This 11' X 7' slope was put down at -30° to a total length of about 440', thus reaching a vertical depth of about 215'. Slope orientation was east-west, down to the west. Heavy water conditions encountered in the slope caused its abandonment.

Classed as a prospect.
Refs.: 1; Hudson, 1971; Vitaly, 1971.

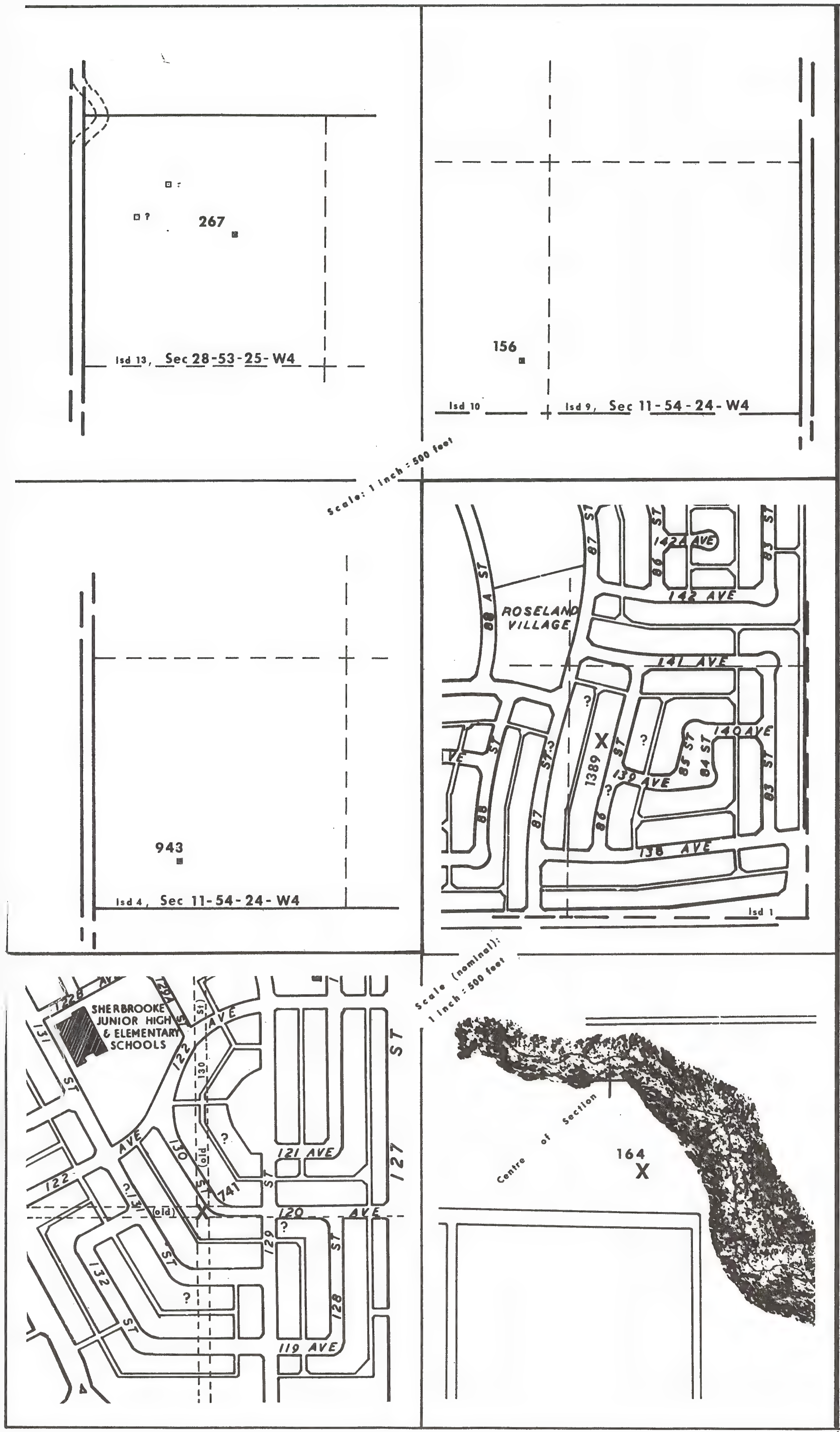


PLATE 14

Legend

Mines, with numbers

721 X Prospect

X2 Very small mine, conventionalized: no plan

X3 Same, position approximate

? ? Indicates position uncertain

X33 Small mine, conventionalized: no plan

X42 Same, position uncertain

Mine No. 1560, no. 2 workings. Boundary mapped from mine plan

X58 Boundary estimated

Mine Entries

Vertical

□ Airshaft; Manway

▣ Hoisting Shaft

Other

Drift (level)

Slope (inclined)

Not known whether 'd' or 's'

Coal Seams

U/g workings

▨ Clover Bar Seam

▩ All other seams

Strip pits

All seams

Scales

Reduced mine-plans, and Plates 15, 16, and part of 14: 1 inch = 500 feet.

BASE MAP of Plates 2 – 13 inclusive and part of 14: Scale variable, within the range of 1 inch = 500 to 540 feet. See text, page 1.

Regarded as: Scale (nominal): 1 inch = 500 feet.

THE RABBIT HILL DISTRICT

PLATE 15

This district – three miles west of Ellerslie – is the largest of the two districts outside of the City; within a 1 1/2 X 1 mile area it contained 30 mines and prospects. Twenty-three of these had a total recorded production of a bit over a million tons. The known history of coal mining in this district goes back to Jan. 1892 when D. C. Robertson commenced to ship two carloads of coal a week to Calgary on the new railroad (Mine X26/29). The last production of record was from a strip-pit in 1959 (No. 1748).

The oldest survey of record in the area is one of 1915. This blueprint shows the White Star nos. 3, 4, and 5 workings of Mine No. 29; nos. 3 and 4 were abandoned prior to 1915. Comparison of the 1915 plan with those of the period 1922–1940, shows marked discrepancies between successive surveys. Using the airshaft of White Star no. 4 as a reference point, it is found that the airshaft's position with respect to the common corner of lsd's 5, 6, 11, and 12, Sec 25-51-25-W4 differs by 185' between the surveys of 1915 and 1940. Apparently the original error was corrected progressively, for the airshaft's position with respect to the same reference point differs by only 70' between the surveys of 1935 and 1940. I assumed that all the error was in the oldest survey. This is reasonable but not proved, and the destruction of all the old tie-point (airshafts and slopes) by filling and/or caving prevents any recovery of the older surveys. The influence of the above error reaches far beyond Mine No. 29, for it appears that a number of the old mines about Mine No. 29 were mapped with respect to either the no. 3 or 4 workings of No. 29. Thus, the error was compounded.

The mine surveyors of the 1920's and 30's made a number of adjustments on their plans in the positions of the active and abandoned mines existing then. I found it necessary to make several similar adjustments to the mapped positions of some mines operated in the period 1922–1940, in compiling the map of the district. Undoubtedly, there are residual errors despite all these adjustments.

It is probable that the same seam was mined throughout this district. The seam appears to have been nearly horizontal, and undulating, although regional dip is gentle to the S.W. A thin, generally 2" – 3" clay parting characterized the middle of the seam. Most of the u/g mines in this district produced small amounts of methane from the seam, and were operated on a safety-light basis.

Mine X26/29 (u/g and strip)(on Plate as No. 29). White Star Mines. Location: lsd's 5, 6, 11 – 14, Sec 25-51-25-W4. 1892–1948. Seam: 2'3" – 5'8", horizontal, undulating. Cover: 0 – 90±'. Known area: 48 3/4a (11 u/g workings and 2 strip-pits). Recorded production (48 yrs of 57): 164,917 tons (91.62 a.ft.). Production 1900–1948 (no. 3 workings and forward: 46 yrs of 49): 163,165 tons (90.65 a.ft.). Estimate average mined thickness of coal at 4 1/2'; this indicates about 42 1/2% recovery.

Remarks: The oldest mine plan we have (1915) shows White Star nos. 3, 4, and 5; nos. 3 and 4 had been abandoned at that time. The 1900 records state that a new mine was opened a quarter-mile west of the then-existing workings. This new mine, I believe to have been no. 3. Thus, the old workings of nos. 1 and 2 apparently underlie the blank area on my map to the N. and N.N.E. of no. 3. Mine No. 1560 (no.3) encountered old unsurveyed workings at several points in this area. From the records it appears that the no. 1 workings of Mine No. 29 had a main entry that was 500+' in length; it was abandoned in 1898. No. 2 was opened in 1898, developed with two entries, and abandoned in 1900.

There are 11 separate u/g workings and two strippits mapped on the plate in this complex labelled Mine No. 29. The two strip-pits – operated in 1917 (S.W.) and before Mar. 1921 (N.E.) – aggregate little more than a half-acre and their production is estimated at 3600 tons (2 a.ft.). It is not possible to apportion the balance of the production among the different u/g workings for lack of knowledge of their respective operating periods. The mapped u/g workings are as follows: No. 3: slope, 1 in 3, 85' map-length; airshaft 40' deep. No. 4: slope, inclination ?, map-length about 65'; airshaft 30' deep. No. 5 (W. of no. 3): slope, inclination ?, map-length about 20'; airshafts (two), depths ?. No. 6: slope, inclination ?, map-length 31'; airshaft 21' deep. No. 7: slope 20°, 110' map-length; airshafts (two), 75' (N.) and 29' (E.) deep. No. 8: slopes (two): 25 3/4°, 90' map-length (N.W.); 30°, 40' map-length (S.E.). No. 9: slope 20°, 45' map-length; airshaft 24' deep. No. 10: slope 19° 33', 125' map-length. The three small u/g workings to either side of the creek N. of no. 3 are named on a 1921 plan as 'Sztyk nos. 1, 2, and 3' from N.W. to S.E. respectively. Mike Sztyk was the lessee of No. 29 in the 1920–1921 season, so all three workings are included in the No. 29 complex although it is doubtful that Sztyk dug all of them. These three minor workings had single (slope?) entries and no airshafts.

Cave-ins were frequent around the turn of the century, in the shallow works along the creek where the cover was only a few feet thick. Faulted ground was encountered in no. 7(?) when driving the entry. The amount of faulting and maximum displacement are unknown; a single displacement of 18" is recorded. The workings of no. 9 were carried into those of the eastern part of no. 8, and this made it impractical to attempt to separate them. At the development stage shown on the plate, the workings of no. 10 caved to quicksand. This resulted in the abandonment of Mine No. 29.
Refs.: 1; 2; 3.

Mine X36 (u/g). Location (unknown): in Sec 25-51-25-W4. Operator: Donald McLeod. Opened in or prior to Feb. 1894. Closure probably forced by lease of entire section to the White Star Mine (No. 29) in Oct. 1894. No production of record, but in Sept. 1894 mine was shipping coal to Calgary. Classed as a very small mine.
Ref.: 2.

Mine X37 (u/g). Location (unknown): in Sec 25-51-25-W4. Operators: Stewart and Wood. Opened in or prior to Feb. 1894. Closure probably forced by lease of entire section to the White Star Mine (No. 29) in Oct. 1894. No production of record. Classed as a very small mine.
Ref.: 2.

Mine No. 29. See Mine X26/29.

Mine No. 877 (u/g). White Star Junior Mine. Location: lsd 11, Sec 25-51-25-W4. 1920–1925. Seam: 4'. Cover: 25±' (see below). Known area: 3/4a (4 workings). Recorded production (6 yrs of 6): 2,831 tons (1.57 a.ft.). Indicated recovery 52 1/2%.

Remarks: Four separate u/g workings numbered in order of age and from W. to E.: nos. 1 (oldest), 2, 4, and 3. No. 1: single entry, no airshaft. No. 2: two entries, no airshaft. It is not known whether these three entries are slopes or drifts, but the former seems probable. No. 3: slope, inclination ?, map-length 43'; airshaft, depth ?. No. 4: slope, inclination ?, map-length about 50'; airshaft 45' deep.

The value given for cover, above, applies only to the no. 4 workings as does the name. The cover over nos. 1 – 3 is not known.
Ref.: 1.

Mine No. 1022 (u/g). White Mud Creek Mine. Location: lsd 12, Sec 25-51-25-W4. 1922–1931. Seam: 3'3" – 5'6". Cover: 20' – 50±'. Known area: 8 1/4a (2 workings). Recorded production (10 yrs of 10): 20,236 tons (11.24 a.ft.). Estimate average thickness of coal mined as 4 1/4'; this indicates about 32 1/2% recovery.

Remarks: The S.W. workings are the oldest: slopes (two), (E.) 30°, map-length 27'; (W.) inclination ?, map-length 50', and an airshaft 27' deep. The N.E. workings had one slope (inclination ?, map-length 42') and an airshaft 24' deep.
Ref.: 1.

Mine No. 1034 (u/g). Black Point Mine. Location: lsd's 6, 7, 11, and 12, Sec 25-51-25-W4. 1922–1949. Seam: 2'3" – 6'. Cover: up to 100±'. Known area: 21 3/4a (six workings). Recorded production (28 yrs of 28): 58,321 tons (32.40 a.ft.). Estimate average thickness of coal mined as 4 1/2'; this indicates about 32 1/2% overall recovery. It is not possible to apportion the tonnage amongst the various workings.

Remarks: No. 1: slope, inclination ?, map-length 31'; airshaft, depth ?. No. 2: slope 24 3/4°, map-length 95'; airshaft 50' deep. No. 3: slope, inclination ?, map-length 30'; airshaft, depth?. No. 4: slope 26 1/2°, map-length 80'; connection made with airshaft of no. 2. No. 5: entry slope (eastern), 27 1/2°, map-length 160'; air slope, inclination ?, map-length 110'. No. 6: slope 21 1/2°, map-length 228'; airshaft, depth ?.

Old unmapped workings were encountered N.E. of no. 1, and N. and S. of no. 2. Faults were encountered in nos. 4 and 5; magnitude and frequency of occurrence are not known. No. 4 is worked into the contiguous parts of both nos. 2 and 3 in such a fashion that it is not practical to attempt to delineate these workings separately.
Ref.: 1.

Mine No. 1059 (u/g). Location (unknown): in NW1/4 Sec 25-51-25-W4. Operator: William Collins. Seam: 5. Cover: 100'. Opened in Nov. 1922 and closed in or before Jan. 1923. No record of production. No mine map. Classed as a prospect.
Refs.: 1; 7.

Mine No. 1091 (u/g). Rabbit Hill Collieries. Location: lsd's 7 – 9, 15, and 16, Sec 26, and lsd's 1 and 2, Sec 35, 51-25-W4. 1923–1940. Seam: slope mine, 3'5" – 6'3"; shaft mine, 4'9". Cover: slope mine, 50' – 110'; shaft mine, 95±'. Known area: slope mine, 48 3/4a.; shaft mine, 2 1/4a. Recorded production: slope mine (16 yrs of 18: no production 1923–24), 209,259 tons (116.26 a.ft.). Estimate average thickness of coal mined as 4 3/4'; this indicates about 50% recovery. Shaft mine (1939–1940: no production in 1939), 4,795 tons (2.66 a.ft.). Recovery was only about 25%, but this mine was in a development stage at the time of its abandonment.

Remarks: Slope mine: slope 19°, map-length 135'; N. airshaft 94' deep; S. airshaft 53' deep. Shaft mine: hoisting shaft 95' deep; airshaft 92' deep.

The slope mine was worked through ground with many apparently minor faults. The number of faults increased to the S.W.

Along the N. edge of these slope workings, there is a note on the plan of Mine No. 1352 to the effect that, for several hundred feet W.S.W. of No. 1352's airshaft, work was done u/g in No. 1091 after 31-x-33 of which there is no record. Thus, the area given above for the slope mine is too small by some unknown amount. Also, the indicated recovery is somewhat too high.

On 16-xi-40 the Mine Inspector (John Crawford) found the airshaft of the shaft mine caved shut from the pressure of a running sand bed the shaft passed through. The hoisting shaft sides were bulging, and running sand was found in the entry: all men were ordered out of the mine. Four days later major subsidence of the surface occurred, centred about a point 230' from the hoisting shaft and a little W. of true N. The area of subsidence was oval in plan and 150' X 100', with a maximum vertical displacement of about 12'. The quicksand had broken into the workings at one or more points and flooded the mine. This mine was subsequently abandoned.
Ref.: 1.

Mine No. 1177 (u/g). Location (unknown): in NW1/4 Sec 25-51-25-W4. Operator: Steve Poholka. 1924–1925. Seam: 4'6". Cover not known. Recorded production 221 tons. Slope on a 20° pitch down to coal; depth to coal not known. No mine plan.
Refs.: 1; 7.

Mine No. 1233 (u/g). Blue Point Mine (see also No. 1628). Location: lsd 5, Sec 25-51-24-W4. 1926–1946. Seam: 3' – 5'6". Cover: 20' – 80±'. Known area: 26a. Recorded production (21 yrs of 21): 127,091 tons (70.61 a.ft.). Estimate average thickness of mined coal as 4 3/4'; this indicates recovery of about 57 1/2%.

Remarks: East of creek, N. slope 30° 7', map-length 50'; S. slope 25°, map-length 53'. Airshafts, N. 30' deep; S. 28' deep. W. of creek, slope 25°, map-length 65'; airshaft, depth ?.

The oldest workings, east of the creek, were flooded out in the spring of 1936, the water evidently coming from still older workings to which the creek had access.
Ref.: 1.

Mine No. 1256 (u/g). Location (uncertain): in lsd's 12 and 13, Sec 30-51-24-W4. Operator: Waslaw Fridel. Prospect shaft was sunk to a depth of 100' in Apr.-June 1927. Nothing of value found. No production; no map of location. Classed as a prospect.
Ref.: 1.

Mine No. 1285 (u/g). South West Coal Mine. Location: lsd 12, Sec 25-51-25-W4. 1928–1931. Seam: 4'6" – 5'. Cover: not known, but probably less than 30'. Known area (2 workings): about 1/4a. Recorded production (4 yrs of 4): 638 tons (0.35 a.ft.). Estimate average thickness of coal mined as 4 3/4'; this indicates recovery of about 30%.

Remarks: The southern and oldest workings had a single entry and no airshaft; the northern workings were similar. Not known whether the entries were slopes or drifts, but probably the former.
Ref.: 1.

Mine No. 1297 (u/g). Ellerslie Collieries. Location: lsd 1, Sec 26-51-25-W4. 1929–1946. Seam: 3'6" – 5',approximately horizontal. Cover: 50' – 100±'. Known area: 11 1/4a. Recorded production (17 yrs of 18; none in 1929): 37,398 tons (20.78 a.ft.). Estimate average thickness of coal mined as 4 1/4'; this indicates 42 1/2% recovery.

Remarks: Slope 31 3/4°, map-length 158'; airshaft 96' deep.

In 1931 two men were killed in an explosion of methane in this mine.

Last date-of-survey notes on mine plan are for 20-ii-46. The mine was flooded shortly before 14-ix-46 when 50' of the slope caved and broke the pump connections. The extent of work done between these two dates (6 1/2 mos.) is not known. The plan also shows caving to the surface at two places at the edge of the creek, where the workings crossed under the road allowance.

A N.W.-S.E. trending fault occurs along the N.E. side of the workings, with downthrow to the S.W. shown. The fault's displacement is not known.
Ref.: 1.

Mine No. 1352 (u/g). Twin City Mine (see also Nos. 177 and 1641). Location: lsd's 8 – 10, Sec 26-51-25-W4. 1931–1956. Seam: 4' – 5'6". Cover: 110±'. Known area: 14a. Recorded production (15 yrs of 16: none in 1931): 66,081 tons (36.71 a.ft.). Estimate average thickness of coal mined as 4 1/2'; this indicates about 57 1/2% recovery.

Remarks: Slope 32 3/4° – 36 1/4°, map-length 153'; airshaft 110' deep.

Correspondence of 1942 refers to gas (methane) found in close proximity to the 'general fault' (fault zone?), but nothing else is known of this feature.
Ref.: 1.

Mine No. 1419 (u/g and strip). Pine Creek Collieries. Location: lsd's 3 – 5, Sec 25-51-25-W4. 1933–1951. Seam: u/g, 2'6" – 5'4"; strip-pit, 5'. Cover: u/g, 40' to 130±'; strip-pit, up to 50±. Known area: u/g, 35a; strip-pit, 6 3/4a. Recorded production: u/g (1933–1948: all yrs), 125,423 tons (69.68 a.ft.); strip-pit (1948–1951), 39,783 tons (22.10 a.ft.). Estimate average thickness of seam mined u/g as 4 1/2'; this indicates about 45% recovery. U/g and strip production are not differentiated in the 1948 returns; strip production estimated at 10,000 tons.

Remarks: Hoisting shaft 71' deep; airshaft, depth ?.

A number of small faults were encountered u/g here. A sketch in the records indicates an orientation of N15°W to N15°E, with displacements up to 22". Implied in the foregoing was downthrow to the W. Three such faults are shown in 40' along the u/g entry. Along the S.W. side of the u/g workings a N.W. – S.E. trending fault occurs with a downthrow of 4' to the S.W.

The mapped u/g workings enclose a small area of unsurveyed older workings, and similar unsurveyed workings were encountered at the W. end of the S. side of the mapped workings, just N. of the road allowance barrier. These unsurveyed parts are attributed to the original operators.

A pillar-cave to surface (unmapped) occurred in or before 1943.

The minimum coal thickness found u/g (2'6") occurred in a limited area where a sandstone roll thinned the coal.

The mine was flooded by the creek in the spring of 1943.
Ref.: 1.

Mine No. 1462 (u/g). Location: lsd 12, Sec 25-51-25-W4. Operator: Joseph Pickard. 1934–1939. Seam: 4'2" – 5'8". Cover: up to 25±'. Known area (two workings): 1 1/4a. Recorded production (6 yrs of 6): 3,849 tons (2.14 a.ft.). Estimate average thickness of mined coal at 5'; this indicates about 35% recovery (see Remarks).

Remarks: East (oldest) mine, slope 22 1/2°, map-length 70'; airshaft 25' deep. West workings, slope 25 3/4°, map-length 47'; airshaft 14' deep.

In good part, both these workings were gopher-holes around and into the old workings of White Star nos. 3 and 5. Stevens (Mine Surveyor) noted on the border of his plan the necessity of adjusting the boundary of the old White Star workings as revealed by these (Pickard) workings. I have so adjusted the workings.

In 1938 Pickard was alleged to have driven about 50' past the lsd 5/15 boundary into Mine No. 1233 ground, causing damage by subsidence to 1233's cookhouse, well, and other facilities. This is a distinct possibility, for the last survey date on the 1462 plan is 12-i-38, yet this western mine was not abandoned until 18-iii-39. In this 14-mo. period slightly more than a quarter of the total production came out of this mine. It is probable, in view of this, that the 35% recovery figure given above is significantly too high. Also, the western workings of 1462 can be regarded as probably extending about 100' to the S. and S.S.E. from the S.E. corner of the mapped workings.

In 1935 the eastern workings were flooded by waters tapped from still older workings. Again, in 1936, the mine was flooded by water moving through old workings connected to the creek. Caving to the surface occurred frequently through the shallow cover of the western workings.
Ref.: 1.

Mine No. 1477 (u/g). Location (unknown): in E1/2, lsd 11, Sec 25-51-25-W4. Operators: Senezko and Gorski. A slope was commenced in July 1935, and was down 45' on a 25° pitch in August. Mine was reported closed on 15-xi-35, but was actually abandoned. Total depth of slope not known. Recorded production: 72 tons. No mine plan. Classed as a prospect.
Ref.: 1.

Mine No. 1492 (u/g). Acme Mine. Location: lsd 7, Sec 25-51-25-W4. 1936–1943. Seam: 3'1" – 4'8". Cover: 100' – 130±'. Known area: 10 1/2a. Recorded production (8 yrs of 8): 12,771 tons (7.10 a.ft.). Estimate average thickness of seam mined as 4'; this indicates a recovery of about 17 1/2%.

Remarks: Hoisting shaft 127' deep; airshaft 127' deep.

There are no known physical factors to account for the extremely low recovery figure given above. I can only attribute it to very selective mining.

The last survey notes on the mine plan are dated 13-i-43; the mine was abandoned shortly(?) before 3-ix-43. What extension (if any) of the u/g workings took place in this 8-month period is not known.

A gas (methane) explosion underground in 1936 caused one fatality.
Ref.: 1

Mine No. 1537 (u/g). Location (uncertain): in N1/2 lsd 16, Sec 26-51-25-W4. Operator: Bernard Nugent. A slope was started in or before June 1938, and in June was down 90' (slope length?). Operations were stopped in Aug. 1938. Nothing of the operator's findings are known. No location map. Classed as a prospect.
Ref.: 1.

Mine No. 1559 (u/g). Bright Star Mine. Location: lsd 12, Sec 25-51-25-W4. 1939–1943. Seam: 4' 6" – 5'3". Cover: up to 20±'. Known area: 2 1/2a. Recorded production (5 yrs of 5): 6,035 tons (3.35 a.ft.). Estimate average thickness of coal mined as 4 3/4'; this indicates about 27 1/2% recovery.

Remarks: Slope 23 1/2°, map-length 38'; airshafts (two): N. 20' deep, S. 17' deep. These workings consisted of burrowing along and into the old workings of Nos. 1022 and 29.

The mine was flooded by the creek on 10-iv-43 and subsequently abandoned. Date of last survey notes on plan, 21-xii-42. The amount of the extension of the workings between these dates (3 1/2 mos.) is not known. Production in this period was a bit over 100 tons. Thus, the mapped area should be somewhat larger (ca 1/2a?), and then the recovery figure would be significantly lower.
Ref.: 1.

Mine No. 1560 (u/g). Nimko Mine. Location: lsd's 6, 7, 10 – 12, Sec 25-51-25-W4. 1939–1951. Seam: no. 1 workings, 4' – 4'6"; no. 2, 2' – 4'6"; no. 3, 5' – 5'6". Cover: no. 1, probably less than 30'; no. 2, 45' – 125'; no. 3, as with no. 1. Known area (3 workings): 4a (see Remarks). Recorded production (13 yrs of 13); 18,929 tons (10.52 a.ft.). Estimate average thickness of seam mined at 4 1/4'; this indicates about 62 1/2% recovery, overall.

Remarks: No. 1, slope 29°, map-length 39'; airshaft, depth ?. No. 2, slope 22 3/4°, map-length 134'; airshaft 45' deep. No. 3, slope 23 1/2°, map-length 63'; no airshaft.

It is not possible to divide the total production amongst the different workings with any accuracy. No. 1 (1939–1943) was abandoned in May 1943 and the last date on the survey notes is 20-v-43. These workings are bounded on the S.E. by a washout where the coal is partly or totally missing. In the W., they drove through and mined part of the ground of No. 877 (no. 3) and worked into the edge of No. 1034 (no. 3).

In 1940 a second slope was put down 22' (vertical depth?) to coal. The location of this slope is unknown. Following the closure of no. 1, a slope was put down in July 1943. It found just 2'8" of coal, the top bench having been washed out. This slope was abandoned without further work. It was not mapped, and its location is not known. It is believed that both these unmapped slopes were in lsd 11, Sec 25.

The no. 2 workings (late 1943–mid 1949) were supposed to have been in the W1/2, lsd 10, but they wandered into all three adjacent lsd's. Last surveyed on 19-v-48, these workings were abandoned 10-iii-49. The extension of the workings in this 9 1/2-month interval is not known. Production was apparently about 1000 tons in the interval. Thus, the area of no. 2 should be larger, and the overall percentage recovery value about 57 1/2%.

Gas (methane) was reported as coming off a fault in these workings. Nothing else is known of structural conditions here. In early 1949 a squeeze was on the main roads of these workings. This would be expected in view of the high recovery rate: wide rooms and narrow pillars.

The no. 3 workings (1949–1951) were largely a salvage effort in previously worked-over ground. Production from here was only about 500 tons.
Ref.: 1.

Mine No. 1561 (u/g). Location: lsd 16, Sec 23-51-25-W4. Operator: D. O. Roberts. In Sept. 1939 a proposed plan-of-mine was submitted to the Board of Utilities Commissioners. The mapped position of this mine is that of the airshaft as shown on the proposed plan-of-mine. Prospect shafts were normally converted to airshafts during u/g development; this is the assumption I made here. However, the scant correspondence in Mines' Division files is followed by an undated memo which states 'that Mr. Roberts was in and advised that his mine is closed until further notice. Date of closing: Sept. 30, 1939'. A blank 'Annual Report of Mine Timbers Used' in the file carries a note to the effect that the mine was abandoned in 1939. There is nothing to indicate how deep the prospect shaft was sunk, nor even to prove that a prospect shaft was sunk. Classed as a prospect.
Ref.: 1.

Mine No. 1594 (u/g and strip). Bright Service Mine. Location lsd's 12 and 13, Sec 25-51-25-W4. 1943–1946. Seam: 4'6" – 4'8". Cover: u/g, up to 80±'; strip-pit, 10±'. Known area: u/g, 1 1/4a; strip-pit, 1/2a. Recorded production (4 yrs of 4): 5,526 tons (3.07 a.ft.). Estimate average thickness of coal mined as 4 1/2'; this indicates an overall (u/g and strip) recovery of about 40%. Underground recovery would be significantly less, and strip recovery markedly higher (more than 70%?), than the overall value.

Remarks: Slope 24°, map-length 46'; airshaft 30' deep.

On their N.E. and N.W. sides the u/g workings were along and into the old workings of Mine No. 29 (no. 6).

It is not possible to separate the u/g and strip production, for both workings were in operation in the 1945–1946 season. On 12-iv-46 the u/g workings were flooded by the creek and abandoned.

The last date of survey of the u/g workings was 27-xii-45. The amount of extension of the u/g workings in the following 3 1/2 mos. is not known.
Ref.: 1.

Mine No. 1628 (u/g). Blue Point Mine (see also No. 1233). Location: lsd's 15 and 16, Sec 23-51-25-W4. 1944–1954. Seam: 3'9" – 4'9", horizontal. Cover: up to 120±'. Known area: 15 3/4a. Recorded production (9 yrs of 11: none in 1944-45): 62,334 tons (34.63 a.ft.). Estimate average thickness of seam mined as 4 1/4'; this indicates about 52 1/2% recovery.

Remarks: Hoisting shaft 100' deep; airshaft 84' deep. Prospect (airshaft) and hoist shaft-sinking took from May 1944 until mid-1946.

The mine was surveyed and then closed for the summer on 18-iii-54. A fire in April wiped out the surface plant, and the mine was abandoned.
Ref.: 1.

Mine 1641 (u/g). Twin City Mine (see also Nos. 177 and 1352). Location: lsd's 9 and 16, Sec 26, and lsd 13, Sec 25, T51-25-W4. 1946–1958. Seam: 4'9"–6'. Cover: 40' – 100±'. Known area: 4 1/2a. Recorded production (12 yrs of 13: none in 1946): 13,852 tons (7.70 a.ft.). Estimate average thickness of coal mined as 5 1/4'; this indicates about 32 1/2% recovery.

Remarks: Isolate slope, inclination ?, map-length 70'. Underground workings: slope 24 1/2°, map-length 92'; airshaft 82' deep.

The isolate slope was put down in 1946 and abandoned without further development on finding excessive water in the seam. The southern slope and drive north were for the expressed purpose of draining the slope on lsd 16. However, the workings were abandoned on 3-v-58 (the date of the last survey, also) without any known connection being made with the northern slope.

The fact that this was mainly development work accounts for the low recovery value. The main drive north had worked-out areas to either side. As a salvage operation two entries were driven west to the old main north entry of No. 1091, and the pillar between 1091's main and counter was pulled.

The mine plan carries a note along 200' of the main return of No. 1641: 'road caved 7-v-57', from 170' north of the airshaft, northward.
Ref.: 1.

Mine No. 1646 (strip). Location: lsd 12, Sec 25-51-25-W4. Operator: J. G. Mucha. 1946–1948. Seam: 3' – 4'6". Cover: probable maximum less than 20'. Known area: 2 1/4a. Recorded production: 7,711 tons (4.28 a.ft.).

Remarks: This pit stripped portions of the old workings of Nos. 1022 (N.E.) and 1594 (u/g).
Ref.: 1.

Mine No. 1658 (strip). Location: lsd's 11 and 15, Sec 25-51-25-W4. Operators: R. Klapstein and T. Opalinski. 1947–1950. Seam: 2' – 4'. Cover: probable maximum for both pits, 25±'. Known area (2 pits): 3a. Recorded production: 11,981 tons (6.66 a.ft.).

Remarks: The southern pit was in an area where the top bench of coal had been washed out, leaving only 2' of coal.
Ref.: 1.

Mine No. 1684 (strip). Location: lsd's 10 and 11, Sec 15-51-25-W4. Operator: J. G. Mucha. 1948–1956. Seam: 2' – 4'. Cover: 5' – 36'. Known area: 8 1/4a. Recorded production: 23, 856 tons (13.25 a.ft.).

Remarks: In part of this area the top bench of the seam had been washed out, leaving but 2' of coal. Reason operator gave for abandonment: "Unstable ground makes work impossible".
Ref.: 1.

Mine No. 1748 (strip). Location: lsd's 5 and 12, Sec 25-51-25-W4. Operator: J. G. Mucha. 1957–1959. Seam: 2'6" – 4'. Cover: up to 21'. Known area: 3/4a. Recorded production: 4,149 tons (2.31 a.ft.).

Remarks: Did not operate after date of last survey, 11-v-59.
Ref.: 1.

Mine No. 1750 (strip). Location (unknown): in W1/2 lsd 9, E1/2 lsd 10, lsd 15, and W1/2 lsd 16, Sec 25-51-25-W4. Operator: A. Horkulak. 1957. In the application to open this mine the following information was given: seam 3' – 4'; cover, 0 – 30'. However, an application to abandon the mine was filed less than a month later, as the coal was found to be non-commercial. This abandonment was accepted 'inasmuch as no coal was produced and the overburden removed has been re-leveled'. The location at which the stripping was done is not known. Classed as a prospect.
Ref.: 1.

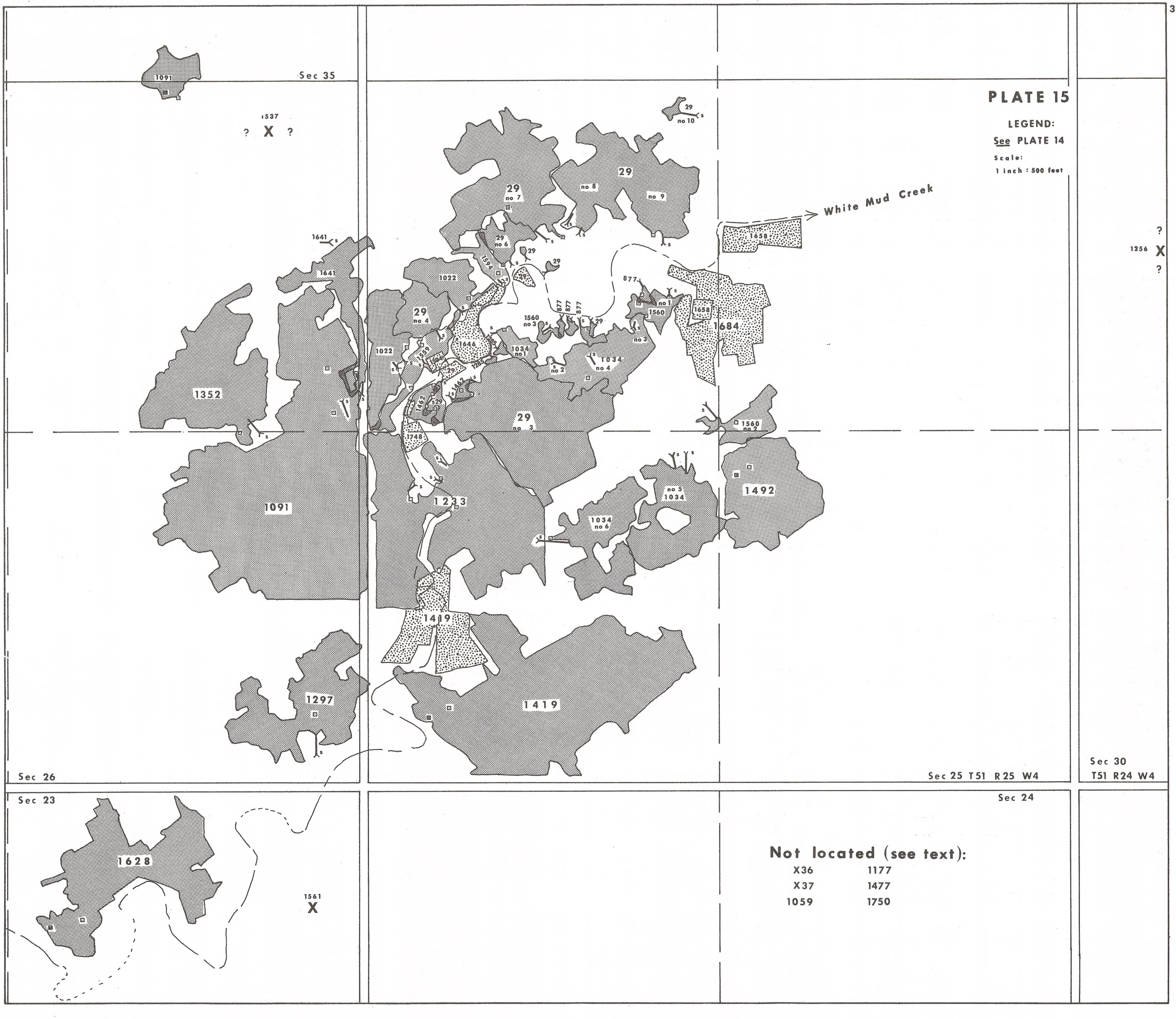


PLATE 15

LEGEND:

See PLATE 14

Scale:

1 inch = 500 feet

Not located (see text):

X36

X37

1059

1177

1477

1750

THE BIG ISLAND DISTRICT

PLATE 16

The least important district of the three, it contains but fourteen known mines and prospects with a total recorded production of less than 20,000 tons. The known history of coal mining here, however, goes back further than that of the Rabbit Hill District - to 1881. The last production of record was in 1940.

Only two of the seven mines (Nos. 24 and 868) have survey plans on record. The oldest of these plans is dated 1918 (No. 24), yet the history of this mine goes back to 1896 at the latest.

This district undoubtedly was developed earlier than that of Rabbit Hill because of the ease of transport along the river route. The oldest known strip mine in the Edmonton Area (X6) was developed here for coaling a river steamer directly from the seam.

There is nothing to indicate that more than one seam was mined in this district.

Note especially, in connection with the old records, that the "Big Island ?" on my plate was labelled "Big Island" by the mine surveyor who mapped No. 868 in Dec. 1920. This island (which no longer exits as an island) is labelled "Island 2" on the third (1929) edition of the Township survey plan of T51-R25-W4. The island next downstream, labelled "Island No. 1" on the Township survey plan, is the island most commonly known as Big Island.

Mine X5 (u/g?). Location (unknown): ' - near Big Island -'. Operators: Hardisty and Wood. Supposed to have opened in late Feb. - early Mar., 1881. Referred to as the 'Big Island Coal Mine'. Nothing else known. Classed as a prospect.
Ref.: 2.

Mine X6 (strip). Mammoth Seam Mine. Location (unknown): ' - near the Big Island -'. Operator: Hudson's Bay Co. A crew of nine men went upriver in Feb. 1881 to open this mine. By late March they had completed stripping an area 52' X 20' of the "Mammoth Seam" with a backwall 60' high, so that a steamer could coal directly from the seam. Nothing is known of this mine's subsequent history. Classed as a very small mine.
Ref.: 2.

Mine X8 (u/g). Location (unknown): ' - at the big island -'. Operators: Moore and Ross. Mine opened by a drift in the winter of 1881-1882. Known production in that season: 100 tons. The coal was stored at the mouth of the drift and, after breakup, was loaded directly onto barges. Nothing is known of subsequent operations. Classed as a very small mine.
Ref.: 2.

Mine X48/24/100/122 (u/g)(on Plate as No. 24). Big Island Mine (See Mine X5). Location: 1sd 14, Sec 20-51-25-W4; reported to have operated also in lsd's 12 and 15, Sec 20. 1896-1907; 1916-1923; 1928-1934. Seam: 3'3" - 5', horizontal. Cover: to 150±'. Known area: 5a (3 workings). Recorded production (18 yrs of 27): 13,150 tons (7.30 a.ft.). Production 1918-1934 (13 yrs of 13): 12,285 tons (6.83 a.ft.). Estimate average thickness of seam mined as 3 1/2'; this indicates about 40% recovery for the three mapped workings.

Remarks: Date of earliest survey 6-v-18, and it showed the beginning of the smallest and oldest of the mapped workings. Date of last survey 8-v-33; closure date 20-ii-34. Extent of workings between these two dates (8 1/2 mos.) is not known. The entry to the largest and youngest workings was 20' above the river. Airshaft, 42' deep. The two isolate drifts are mapped entries to workings abandoned prior to the survey of 1918; their u/g extent is unknown. At least four, and perhaps five or more additional entries to unmapped u/g workings existed besides the two isolate drifts shown. The output in Feb. 1898 was stated to be 30 tons/mo.; no production was reported for that year. The output in Jan. 1903 was reported to be 10 tons/day; no production was reported for that year, either. In view of the number of unmapped workings and the years of no production reports, it is certain that the u/g workings are significantly more extensive than shown.

A 1963 inspection found two small cave-in holes amongst the trees on part of the Windermere golf course. These must have resulted from subsidence over unmapped workings downstream of those mapped herein.

The multiplicity of mine numbers resulted from the scattered and intermittent nature of this operation. Continuity was supplied only by the use of the same mine name.
Refs.: 1; 2.

X61 (u/g). Location: 1sd 8, Sec 29-51-25-W4. Operator: unknown. Period of operation: unknown. Seam: 4' - 5'. Cover: very shallow; probably less than 20'.

Beach located and mapped this 'small drift' in the Big Island seam, and reported it in 1934. He stated that 'the coal is between 4 and 5 feet thick and about 25 feet above the low water level'.

No mine plan. Production unknown. Classed as a very small mine.
Ref.: 9.

X62 (u/g). Location: 1sd 13, Sec 28-51-25-W4. Operator: unknown. Period of operation: unknown. Seam: 4' - 5'. Cover: probably no more than 60'.

Beach located and mapped this 'small drift' in the Big Island seam, and reported it in 1934. On his map he did not use the standard 'drift' symbol that he used elsewhere. Nevertheless, in his text he referred to this as a small drift and it is so mapped here.

Seam reported as 'between 4 and 5 feet thick and about 25 feet above the low water level'.

No mine plan. Production unknown. Classed as a very small mine.
Ref.: 9.

Mine No. 17 (u/g). Location (unknown): ' - at Big Island -'. Operator: R. Holloway. The Mine Inspector reported in April 1899 that this was an untimbered gopher-hole [drift] 16' - 18' deep. No mine map. Classed as a prospect.
Ref.: 1.

Mine No. 24. See Mine No. X48/24/100/122.

Mine No. 100. See Mine No. X48/24/100/122.

Mine No. 122. See Mine No. X48/24/100/122.

Mine No. 369 (u/g). Location (unknown): ' - 3 1/2 miles west of the White Star Mine [No. 29: Rabbit Hill] -'; file folder labelled Sec 28. Operator: J. W. Petrie. Late 1912 - early 1913. ' - I did not mine only a few days. - did not sell but a few loads -'. No recorded production. No mine map. Classed as a prospect.
Ref.: 1.

Mine No. 721 (u/g). Location (uncertain): 1sd's 10 and 11, Sec 29-51-25-W4. Operators: H. G. Worthington and R. Cunningham. Late 1917 - early 1918. No production of record, but apparently produced about 35 tons in 1918. No mine plan; positioned on Plate 16 on the basis of topography. Classed as a prospect.
Ref.: 1.

Mine No. 865 (u/g). Location (uncertain): 1sd 11, Sec 29-51-25-W4. Operator: H. V. Colbert. Late 1920 - early(?) 1921. In Dec. 1920 a drift was in 60'. Recorded production: 126 tons. No mine plan. Positioned on the plate on the basis of topography. Classed as a very small mine.
Ref.: 1.

Mine No. 868 (u/g). Falvo Mine. Location: 1sd's 5 and 12, Sec 28-51-25-W4. From before 1920 to early 1928. Seam: 3' - 4'. Cover: to 130±'. Known area: 1 1/2a. Recorded production, 1920-1928 (9 yrs of 9): 4147 tons (2.30 a.ft.).

Remarks: Earliest survey, Dec. 1920; last, 7-ii-24. Closure date was in Feb. 1928. Airshaft 70' deep. At the time of the earliest survey, two drifts to abandoned workings were mapped, one to either side of the north entry to the mapped workings. These younger u/g workings were carried through the southernmost of the mapped abandoned drifts. A new mine was opened by Falvo in 1sd 12 in Dec. 1927.

In view of the unknown extent of u/g workings abandoned prior to 1920, and of those completed in the period 1924-1928, after the last survey, actual u/g workings must be regarded as markedly more extensive than is shown on the plate.
Ref.: 1.

Mine No. 922 (u/g). Location (uncertain): 1sd's 11 and 12, Sec 28-51-25-W4. Operator: D. Falvo. 1921-1926. Recorded production (6 yrs of 6): 1152 tons. Seam: 5'. No mine plan. Positioned on the plate on the basis of a crude, very small-scale location sketch of 1922, modified by myself on the basis of topography.
Ref.: 1.

Mine No. 933 (u/g). Location (uncertain): 1sd's 1, 2, and SE 1/4 of 1sd 3 (W. of river), Sec 29-51-25-W4. Operator: J. M. Quebec. Late 1921-1923(?). No production of record; no mine plan. Positioned on plate on basis of topography. May have operated only from Oct. 1921 to Jan. 1922. Classed as a prospect.
Ref.: 1.

Mine No. 1550 (u/g). Model Mine. Location (uncertain): portions of 1sd's 10, 11 and 15 (W. of river), Sec 29-51-25-W4. Late 1938 - early 1940. Recorded production (3 yrs of 3): 247 tons. No mine plan. Positioned on plate on the basis of topography.
Ref.: 1.

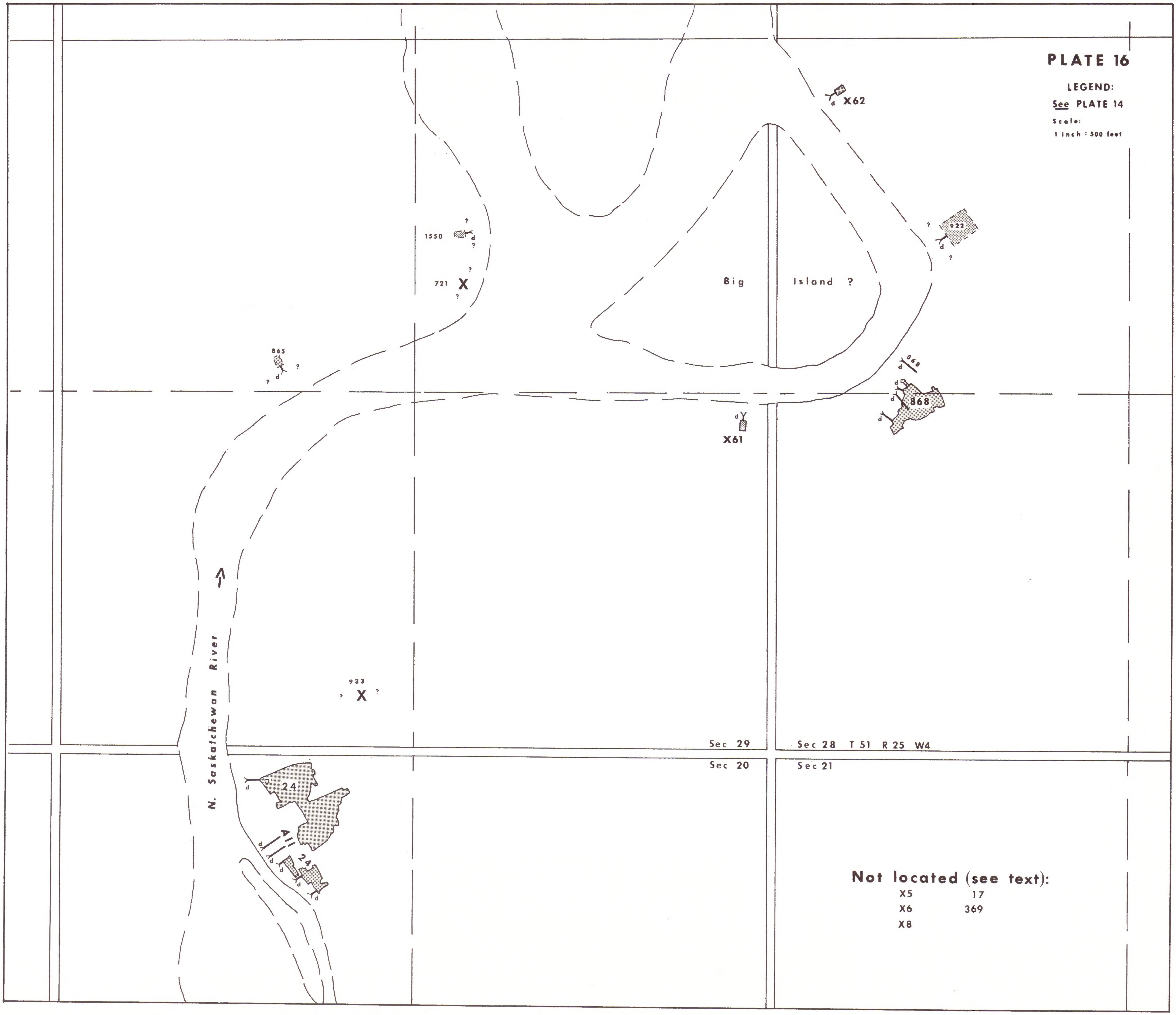


PLATE 16

LEGEND:
See PLATE 14

Scale:
1 inch : 500 feet

Not located (see text):

X5
X6
X8
17
369

ATE DUE SL

REFERENCES CITED

General Reference 1. Archival and current materials of the Mines Division, Provincial Department of Mines and Minerals, in the Dept. of Agriculture Building, 9718 - 107 St., Edmonton. These materials consist of the following:

Mine maps, filed by mine number in storage bins in the sub-basement Records Room, except for some few maps of current interest kept in the Division offices, 8th floor;

Correspondence, inspectors' reports, and other filed materials. Shelved in file folders by mine number in the sub-basement Records Room. Occasionally, files of current interest are temporarily in the Division offices, 8th floor;

Statistic Yearbooks, 1917 onwards. Coal production, employees, timber used, and so forth. Shelved in the sub-basement Records Room, except for the current (last) book, in the Division offices; Dept. of Public Works, Coal Mines Branch, Annual Reports, 1899 onwards (incomplete). In the Director's office, 8th floor; and Miscellaneous records, such as 'The List of Mines by Coal Areas', 'List of Mines for which No Maps are Held', and similar generalized record books in the Division offices.

General Reference 2. The Bulletin; later, The Edmonton Bulletin. On microfilm (except for a few missing issues) in Micro-materials, Cameron Library, University of Alberta. Mines referenced from this source:

Introduction, history: 6-xii-80, p. 3; 22-vii-82, p. 1; 30-i-92, Supplement; subsidence, 29-ix-98, p. 1; 6-x-98, p. 3; 4-ix-99, p. 1; 1-xii-99, p. 1. X1: 28-i-82, p. 3; 22-xi-84, p. 1. X2: 10-i-81, p. 1; 28-iii-81, p. 3 and following issue; 22-vii-82, p. 1; 12-viii-82, p. 1; 13-i-83, p. 1; and perhaps 10-iii-83, p. 1, although this may be X9. X3: 20-xii-80, p. 3; 3-i-81, p. 3; 24-i-81, p. 4; 31-i-81, p. 4; 7-ii-81, p. 1. X4: 6-xii-80, p. 3. X5: 28-ii-81, p. 1. X6: 28-ii-81, p. 1; 7-iii-81, p. 4; 21-iii-81, p. 3. X7/6: 17-xii-81, p. 3; 24-xii-81, p. 1; 24-xi-83, p. 1. X8: 27-i-83, p. 1; 27-ix-84, p. 1. X9: 28-i-82, p. 3; 27-i-83, p. 1; 17-ii-83, p. 1; 10-iii-83, p. 1 (may apply to X2). X10: 31-i-81, p. 4; 7-ii-81, p. 4; 14-iii-81, p. 1; 28-i-82, p. 1; 4-iii-82, p. 1; 18-xi-82, p. 3. X11: 18-xi-82, p. 1; 27-i-83, p. 1; 10-iii-83, p. 1; 27-x-83, p. 1. X12: 25-xi-82, p. 1. X13: 5-i-84, p. 1. X14: 17-xi-83, p. 1; 3-x-92, p. 1. X15: 24-xi-83, p.1. X16: 10-xi-83, p. 1; 15-iii-84, p. 1; 30-x-86, p. 1; 6-iv-89, p. 1; 11-x-90, p. 1; 23-xi-96, p. 1; 3-vi-97, p. 3. X17: 1-xi-84, p. 1; 9-i-86, p. 1. X18: 29-xi-84, p. 1; 3-xii-87, p. 1; 17-xii-87, p. 1. X19: 9-i-86, p. 1. X20: 23-i-86, p. 1. X22: 13-xi-86, p. 1; 5-xi-87, p. 1; 10-xii-87, p. 4; 31-xii-87, p. 3; 14-i-88, p. 1; 3-iii-88, p. 4. X23: 24-ix-87, p. 1; 26-xi-87, p. 1; 31-xii-87, p. 3, and for interest, 26-iv-97, p. 2. X24/10: 3-iii-88, p. 4; 8-ii-90, p. 1; 4-xi-95, p. 1; 25-xi-95, p. 4; 28-xi-95, p. 1; 31-viii-96, p. 2; 6-iv-00, p. 6. X25: 8-ii-90, p. 1. X26/29: 9-i-92, p. 4; 30-i-92, Supplement; 19-iii-92, p. 1; 6-xi-93, p. 1; 13-xi-93, p. 1; 7-xii-93, p. 1; 25-xii-93, p. 4; 1-ii-94, p. 1; 22-ii-94, p. 3; 1-iii-94, p. 3; 1-x-94, p. 4; 2-iii-96, p. 2; 3-xii-96, p. 6; 7-xii-96, p. 4; 2-xii-97, p. 1. X28: 20-x-92, p. 1; 7-iii-95, p. 4; 14-ii-98, p. 1. X29: 20-x-92, p. 1; 7-xi-92, p. 3, 4; 12-xi-94, p. 4. X31: 3-xi-92, p. 1; 7-iii-95, p. 4; 9-xii-95, p. 1; 23-xi-96, p. 1. X32: 21-xi-92, p. 1. X33: 19-iii-92, p. 1; 28-ix-93, p. 1; 19-ix-95, p. 4; 3-ii-96, p. 1; 20-ii-96, p. 1; 4-xi-97, p. 1; 29-ix-98, p. 1. X34: 14-xii-93, p. 1; 1-iii-94, p. 1; 18-x-94, p. 4; 25-xi-95, p. 4. X36: 15-ii-94, p. 1, 4; 22-ii-94, p. 3; 3-ix-94, p. 1. X37: 15-ii-94, p. 4; 22-ii-94, p. 3. X38: 19-iii-94, p. 1. X39: 14-i-95, p. 1. X40: 21-i-95, p. 1. X41: 11-ii-95, p. 1. X42: 21-ii-95, p. 1; 4-xi-95, p. 1; 23-xi-96, p. 1; 17-iii-98, Supplement, p. 2. X44: 16-xii-95, p. 1. X45/12: 9-iii-96, p. 1; 23-xi-96, p. 1. X46: 23-xi-96, p. 1; 24-vi-97, p. 3. X47/15: 23-xi-96, p. 1; 10-xii-96, p. 4; 11-iii-97, p. 1; 20-xii-97, p. 1; 20-x-98, p. 1. X48/24/100/122: 7-i-97, p. 1. X65: 8-ii-90, p. 1. X66: 8-ii-90, p. 1. 11/19/22: 17-xi-98, p. 1; 6-ii-99, p. 1; 6-iv-99, p. 1; 13-xi-99, p. 1; 5-i-00, p. 2. 23: 28-xi-98, p. 1. 43: 15-xii-99, p. 1. 46: 30-x-99, p. 1. 50: 30-iv-00, p. 1. 67: 17-viii-99, p. 4; 22-viii-99, p. 2; 14-xii-00, p. 1. 93: 17-viii-04, p. 5. 632: 21-xii-00, p. 6.

General Reference 3. The South Edmonton News; later, The Alberta Plaindealer. On microfilm (except for a few missing issues) in Micro-materials, Cameron Library, University of Alberta. Mines referenced from this source:

X26/29: 12-xii-95, p. 8; 28-i-97, p. 1; 2-xii-97, p. 1; 6-i-98, p. 1. X29: 15-xi-94, p. 1; 31-i-95, p. 1; 7-xi-95, p. 8. X39: 8-xi-94, p. 4; 17-i-95, p. 1; 24-i-95, p. 4. X40: 24-i-95, p. 1. X42: 9-ix-98, p. 8. X45/12: 1-ix-99, p. 8; 26-i-00, p. 5. X51: 8-xi-94. p. 1. X53: 20-xii-94, p. 4; 31-i-95, p. 1. X55/25: 28-x-97, p. 1. X56/4/5: advertisements in ix-98 as "Martin's Coal Mines"; 1-ix-99, p. 8. 67: 8-ix-99, p. 8.

General Reference 4. Map collection, Engineering Department, City of Edmonton, 5th floor, City Hall.

Entries to the following mines are marked on a copy of Driscoll & Knight's Map of The City of Edmonton (7th ed.), scale 1" = 1200': X16; X24/10; X32; 18/45; 773. The entry to X16 is the airshaft, not the drift.

Mine No. 177: Linen plan by R. G. Stevens, scale (not on plan): 1" = 100', dated 19-xii-21. Carries the following notes: "NOTE Workings shewn in blue are supposed to be those of the Upper Seam." "These were connected to the lower seam by a slope."

General Reference 5. Ernest Brown Collection, Archives Division, Provincial Museum and Archives, 12845 - 102 Avenue, Edmonton. The following mines are referenced to photographs from this source:

X2: photos (M) 266, grp 40, Bk 4, p. 12; B873, pan. from MacKay Ave. School, 1906. X9: photo (M) 226, grp 40, Bk 4, p. 12. X16: photos (M) 508, Bk 2, p. 165; (M) 459, near the foregoing; T110, Bk 2, p. 167. X24/10: photos B.1539-B.1540. X45/12: photo (M) 199, Bk 1, p. 55. X56/4/5: photo (M) 199, Bk 1, p. 55. 18/45: photo (M) 300, Box 30, Ch. 22. 68: photo B.1632. 89: photo B.1608. See also B.1607.

General Reference 6. Historical Exhibits Building, Historical Section, Parks and Recreation, City of Edmonton, 10105 - 112 Avenue, Edmonton. The following mines are referenced to photographs from this source:

X7/6: proof print of (M) 123, titled "Brindley's Gold Dredge, 1894".
X16: sepia print of (M) 384, dated 6-xi-91; Historical Div. No. 65/244.

General Reference 7. Campbell, J. D., 1964. Catalogue of coal mines of the Alberta Plains: Res. Counc. Alberta Prel. Rpt. 64-3, 140p. plus maps. NOTE: The many early references to this source were eliminated in the detailed study. One mine is now referenced to this source: 1177: p. 105.

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